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ABSTRACT

This is the second of two volumes containing papers focusing on reading processes and pedagogy that were drawn from the nineteenth annual meeting of the National Reading Conference held in 1969. Among the topics covered in the 37 papers are the following: interpersonal dynamics in counseling students with learning problems, developing an effective listening program, college reading and television, study skills, materials evolved from teaching delinquents, learning centers, reading improvement programs, reading materials selection, critical reading, techniques to use with rate pacers, the cloze procedure, reading comprehension, teachers' attitudes toward teaching reading in the content areas, motivation in learning, creative reading, reading difficulties, and content area reading programs. (FL)

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Reading: Process and Pedagogy

NINETEENTH YEARBOOK OF THE
NATIONAL READING CONFERENCE
IN TWO VOLUMES

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VOLUME II: PEDAGOGY

Edited by
George B. Schick
and
Merrill M. May
Purdue University

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PREFACE

The Nineteenth Yearbook of the National Reading Conference contains selected papers presented at the Nineteenth Annual Meeting which took place at Georgia State University in Atlanta, Georgia, on December 4, 5, and 6, 1969.

The papers have been selected for publication by a special committee and generally put together in alphabetical order with but one exception: The President's Address is placed first, in Volume One.

The Journal of Reading Behavior

A Scholarly Quarterly in Reading

PURPOSE

The National Reading Conference has launched a new quarterly journal, **The Journal of Reading Behavior**, in January, 1969. This scholarly journal will publish mainly four types of articles: original research in reading and verbal behavior, discussions of theoretical positions, critiques of pedagogical approaches to reading instruction, and expository discussions of areas of concern in reading and related disciplines.

It is designed to provide a means of communication between those people interested in reading and those working in such related fields as psychology, counseling, remedial instruction, verbal behavior, and learning disabilities.

SCOPE

Generally, articles published in the journal will be on the secondary school, junior college, college, university, and adult education levels. However, any article dealing with significant aspects of reading behavior, regardless of the population employed, will be considered for publication. **The Journal of Reading Behavior** welcomes excellently conceived articles about significant issues in reading. In particular, it welcomes reports of research and theoretical articles which add valid information in such areas as the nature of the reading process, what the reading behaviors are, how to study reading behaviors, reading behavior as an aspect of verbal behavior, how one learns to process information, and improving reading behaviors.

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Selected Short Stories—Rx for the Reluctant Reader

Shirley Aaronson
Hofstra University

One of the gentlest euphemisms used by educators is the catch phrase "reluctant reader" which manages to lump a rather disparate group into one tidy package. Whatever the causes, this group is characterized by a strong disenchantment with reading as a recreational activity. The truth of the matter is that many of these students want to broaden their reading interests but are frustrated by the seeming difficulty of the task. The ability to read novels, short stories, non-fiction, etc., does not appear miraculously, but rests on a well-structured foundation of cumulative skills, reinforced by practice and sustained interest. Consequently, a program set up to encourage recreational reading as part of a remedial course will flounder if it rests only on the traditional king-pins of book lists and book reports. Past disappointments have spurred me to try a more meaningful approach towards reaching reluctant readers, one that considers the psychological, intellectual, and academic needs of our students. The approach that I found most successful was to expose students to selected short stories while simultaneously teaching the skills and methods necessary to insure success in this area.

Why short stories? It is a perfect medium for young adults who are the most representative group at our junior colleges. A short story can be read at one sitting, although several re-readings are desirable. In fact, one test of the excellence of a short story is whether it can be read a second or third time with continued or renewed enjoyment. Short stories appear in infinite varieties of profundity, difficulty, length, style, and plot and consequently can appeal to all tastes and ranges of ability. In addition, students can be taught the skills and understandings necessary for the appreciation of the short story rather quickly while reaping extensive delights in the process. Another factor which makes the short story an attractive medium for young people derives from the basic themes of these stories which relate to some observation about human nature—its flaws and its strengths. Many of our students are at that stage of life when they question and seek answers to the paradoxes of society and human nature, particularly its contradictory, amusing, and unexpected aspects. The short story provides a kind of "substitute life laboratory" because of the wealth of perceptive and sensitive comments to be found there about such themes as fate, loyalty, love, estrangement, hubris, etc. For the student whose experiences have been narrowly circumscribed, exposure to the better short stories can be edifying and sometimes therapeutic; and for our alienated,

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anxious, and confused youth, short stories can be relevant because they mirror the world about them.

Since I am speaking not as a literary expert but rather as a reading teacher eager to motivate students to read for enjoyment, the discussion which follows simply represents a search for better methodology.

One of the keys to understanding short stories is to examine what the major short story writers have said about their craft (8, 9). When I reflected on the views of these masters, I realized that my teaching approach was inappropriate because I demanded performance from my students in areas in which they were ill-prepared. Specifically I was concentrating on such aspects as characterizations, theme, point of view, conflict, etc. but which in practice proved to be too abstract and counter-productive for many of the students in view of their reading skill deficiencies. I have since discovered that for students to experience success in the realm of short stories, they must be first introduced to the intrinsic techniques and conventions that have become an accepted part of this craft as well as being taught the specific skills they need for the reading act. Unless these instructional aspects are understood, we will find ourselves talking over the heads of students.

The short story seems to be a product of recent times—created out of the special circumstances of the 19th century which witnessed the emergence of a general reading public due to the spread of literacy. Because of mass communications, modern means of transportation and what McLuhan (4, p. 63) described as the world having become a sort of "global village," there arose a greater commonality of experience shared by people the world over. As the reading public evolved and became more sophisticated, a new group of writers emerged eager to break with traditions of the past because they sensed that readers did not have to be told everything as is done in the novel where verbosity and endless description were the norm (1, pp. 13-27). This insight triggered the development of the specific genre known as the short story, which can be loosely defined as a depiction of the human experience using techniques of conciseness, suggestion, and economy of language. O'Faolain (6, p. 151) has stated the case well,

> A short story writer does not tell us things so much as let us guess or know them by implying them. The technical advantage is obvious. It takes a long time to tell anything directly or explicity and it does not arrest our imagination or hold our attention so firmly as when we get a subtle hint. This compression by suggestion and implication is one of the great charms of the short story.

O'Faolain has provided the rationale for a very important convention found mainly in short stories, that is economy of language. This deliberate mode of literary expression has given rise to a greater reliance on symbolism, irony, and figurative language since every word and every line may work doubly in suggestiveness. The short story writer is concerned with words in sentences; the novelist's range broadens to the paragraph or even the chapter. Faulkner (9, p. 25) summed up the difference between the novel and the short story: "You can be more careless, (in the novel) you can put more trash in and be excused for it. In a short story that's next to [illegible] poem, almost every word has got to be exactly right".

Another convention much employed by modern short story writers is the "abrupt opening" (6, p. 150) which forces the reader to focus immediately on the dynamics of the story. Poe originated this approach of direct contact between reader and writer (later perfected by Hemingway), and it has now become one of the more basic conventions of the short story. O'Faolain (6, p. 150) offers the following advice to writers,

> At the very opening, a modern writer must make an immediate and intimate contact with his story. When I say this, I am not thinking of the beauty of the phrase or the rhythm of the sentences. I am only thinking of this one kind of effectiveness—do we strike the key-note at once?

The short story is clearly incomplete unless a unity of theme about human nature is delineated. (3, p. 511). Usually a writer will focus on what Binder Matthews (8, p. 11) describes as "a single emotion, a single character, a single event, or on the series of emotions called forth by a single situation". When the writer devises the outline of his story, he focuses on one aspect, however rambling and discursive his actual writing style. In the judgment of some critics, the better stories have very basic themes which tend to be retold in many ways because there are so few, while the more mediocre resort to artificial devices and contrivances (9, pp. 32-38).

When the student is able to appreciate that not only will he encounter abrupt openings, an economy of words heightened by an emphasis on suggestion and implication, and a unity and concentration of theme about human nature, he will then be able to narrow his energies to focusing on the essence of the short story, rather than ranging far and wide in his consideration.

What does this mean in terms of teaching strategies? First, the student has to be trained to plunge into the story quickly without benefit of the usual introductory comments. It is important to teach the student to get involved immediately by helping him make the transition from the outer world to the story world. This can be accomplished by exposing students to the opening parts of selected short stories and then leading them to conjecture about the implications of the word clues. The opening paragraphs are veritable gold mines containing clues to character, setting, point of view, and style, all of which deserve the closest attention. James Joyce (10, pp. 231-238) begins the short story "The Boarding House" with the following words: "Mrs.

Mooney was a butcher's daughter. She was a woman quite able to keep things to herself; a determined woman". In those few lines, much that is meaningful to the story is suggested. Mrs. Mooney *will* solve the impending crisis, namely getting her errant daughter married, because she is a determined woman. The short story, "An Outpost of Progress" by Conrad (10, pp. 88-114) opens with:

> There were two white men in charge of the trading station. Kayerts, the chief was short and fat; Carlier, the assistant was tall, with a large head and a very broad trunk perched upon a long pair of thin legs.

The personality differences which will ensue from their enforced isolation in the jungle is subtly intimated in those well-chosen words, and contained reading will confirm the early judgment. The list of examples can be extended ad infinitum; however, the rule holds true, namely train students to focus on the short story's abrupt opening and its implications in order to help prepare them for the development of plot and theme.

In addition, the students need special help in handling inferences that are conveyed by figurative language as found in short stories. A good many students lose interest in figurative language because they find it strange and unclear. Yet when these students are helped to realize that figurative language is used frequently and acceptably in the vernacular for dramatic effect in conversation, e.g., "tied in knots", "dead as a doorknob", "acts like a live wire", "be uptight", etc. they are able to relate better to this concept. So when Mrs. Mooney of "The Boarding House" is described in the following way: "She deals with problems as a cleaver deals with meat," (10, p. 233) the association of ideas is made quickly and naturally. Exercises to strengthen these skills can be found in many workbooks such as Tactics I and II (5). Because every word in a short story counts, the reader has to become all eyes, ears, and mind; he must become involved in order to be able to supply the missing parts that are suggested. Students should be provided with paragraphs of increasing complexity which focus on inference, suggestion, and implication. A good source would be excerpts from selected short stories which are duplicated for class use and discussion.

The most abstract skill to be learned and probably the most difficult to teach effectively is the discovery of the unity of theme and purpose of the author. However, the key to the mystery usually narrows itself down to some generalization made by the author about human nature or life as revealed by a consideration of the characterization, the language, and the circumstances of the story (2, pp. 8-9). For example, Mrs. Mooney because of her determination, and aided by the pressures of society and her bully of a son, is able to force the young lodger to marry her daughter. Joyce is probably sardonically commenting on how "fate" is sometimes arranged by determined people. Hemingway, in "Soldier's Home" (10, pp. 207-214) deals with the difficulty of adjusting to home life after the gruesome experience of war. D. H. Lawrence, in the short story, "The Horse Dealer's Daughter" (10, pp. 251-269), seems to be saying that the ability to love is strengthened when people lose their protective exteriors, which is reminiscent of the current "hippie" philosophy. Students generally fumble in their initial attempts to uncover the theme, but as their skill and confidence improve, there is a commensurate gain in sophistication and appreciation. If the teacher chooses wisely, a delicious assortment of stories reflecting on the vagaries of human nature can be provided.

Since this program has been instituted, the responses of the students have been enthusiastic and positive because another dimension has been added to the learning experience, that is, reading for enjoyment. When the "reluctant reader" perceives like our troubled hero Portnoy (7, p. 221) that, "My God! The English language is a form of communication!" and "words are not only bombs and bullets—no they are little gifts, containing meanings," he will be well on his way towards growth in reading.

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Interpersonal Dynamics in Counseling Students with Learning Problems

Jules C. Abrams
Hahnemann Medical College and Hospital

In a previous paper (1) I discussed the various problems encountered by the clinical psychologist in his attempts to cope with the emotional conflicts of college students. At that time the emphasis was placed upon the innumerable intrapsychic problems that could interfere with learning such as fear of curiosity, fear of one's aggressive impulses, inadequate self-concept, etc. It was pointed out that the recognition of the emotional factors which interfere with learning does not obviate the necessity of developing and refining better methods of instruction. It simply takes cognizance of the fact that teachers are not omnipotent and that some students cannot learn in spite of excellent instruction.

The previous paper was primarily concerned with the diagnosis and treatment of those conflicts which interfere with either the acquisition or the utilization of skills. The focus of this paper will be upon the complex psychological structure that is inevitably established when one attempts to help a youngster who has "defaulted" from society. Although the orientation here is a clinical one, based primarily on a one-to-one relationship between the counselor and the student, I believe that many of the dynamics to be discussed are experienced (perhaps with less intensity) by the teacher in the classroom.

THE INTERPERSONAL SITUATION

Much has been written about what the child conceals from the counselor—and often from himself. But what the counselor conceals from the student is almost never mentioned. Yet it too is important. In any counseling situation, an intricate interpersonal relationship is established, with realistic and unrealistic aspects. Not only does the child bring certain fears, assumptions, and prejudices to the situation, but the counselor, too, has certain anxieties, expectations, and hypotheses which inevitably must color his perception of the student and what the student reveals to him. In other words, this is an important and personal situation for *both* parties, the one who seeks help and the one who attempts to provide it.

Let us consider one example of how the needs and problems of the counselor (or in this specific case, the teacher) can strongly affect his relationships with certain students. A Negro teacher, born and raised in the ghetto, overcomes the tremendous social burdens of his early years and ultimately achieves his ambition to graduate from college and to teach in a secondary school. In order to have reached this position, this teacher has had to deal with prejudices directed against him, has had to work desperately to overcome a deficient language and experiential background, and probably has had to provide his own push and motivation from within. In other words, he has done it on his own! As he perceives it, with little help from anybody, he has through his own guts and determination pulled himself out of the hell-hole in which he was born and has achieved some measure of dignity and self-respect.

One might suspect that this Negro would now have great compassion and sympathy for any student who is besieged by the same problems that earlier faced him. In many cases this is true. But man is a complex animal, defined by his historical and social position, by his personality make-up, by the gratifications he seeks and by the specific behavior and personality of the people with whom he relates. This particular Negro teacher reacts quite differently from what many of us might anticipate. He is completely intolerant of the Negro student who is experiencing many of the problems that he, the teacher, once had to solve. He cringes when the student lapses into the "idiom," the remarkably rich and idiosyncratic language of the ghetto. He is not willing to allow these youngsters simply to learn a "new" language, one which would permit them to adapt to the conceptual structure of middle-class society. He insists rather that they substitute this "language" for their own, that they deny their cultural heritage as he has denied it. It is almost as if he feels he is exposed and made vulnerable by the behavior of the ghetto student.

But is is much more than just the use of the Negro dialect that upsets this particular teacher. It is the manner in which his Negro students attempt to cope with the problem of being black in a white society. Perhaps they are too "aggressive," or perhaps they "demand" too much, or perhaps they just do not realize how important it is to learn and to achieve academically. After all, hasn't he made considerable sacrifices because of his recognition of the importance of fitting into the white man's society?

I believe that it is this attitude on the part of this teacher that accounts for his difficulty in understanding and relating to his black students. Beset by his own identity problems, he is in a quandary when he observes a wide variety of personal identity solutions. By discrediting other solutions, he is able to reassure himself either as to his "normality" or as to the acceptability of his solution. It is no wonder that the student, sensing this, begins to perceive the teacher as an "Oreo"—black on the outside, but white on the inside. Thus, in this particular example, we see how uncertainty about one's own self brings about an interpersonal relationship characterized by suspiciousness, hostility, and fear. Certainly these are not the qualities that will contribute to an environment in which there is receptivity to the learning process. Nevertheless, one must not forget that the same kind of uncertainty in another Negro teacher might lead to greater empathy and capacity to see and to understand a wide variety of solutions open to his own black students.

INTERPERSONAL ROLES

Let us now return to the clinical situation, where the student approaches the counselor asking for help with the baffling problem of continued failure to achieve. Filled with feelings of futility, the student is tempted to give up the struggle, regress to an overtly passive and helpless position, and demand that some real or fantasied strong figure in the environment "nurture" and save him. In other students, there is a despairing abandonment of the search for help, and instead they resign themselves to a vague existence bordering on nothingness. Others settle into a pattern of achieving continuing "immediate" happiness by keeping almost uninterruptedly "turned on" with marijuana or other drugs. Still others show their opposition to what they feel is a tendency to turn people into cogs of dehumanized machines. They rationalize their learning problems by insisting they are fighting alienation and routine. Finally others have to fight their wish to regress to the passive dependent position in relation to the counselor. Instead they must deny their regressive impulses and drive away potentially helpful persons through arrogant or rebellious provocation and through discouraging inflexibility.

The counselor must remain vigilantly alert not only to the attitudes of the student with these problems, but also to his own attitudes in reaction to those of the student. If, for example, the counselor has strong dependent needs of his own, he may feel compelled to "win over" the student at any cost. Rationalizing his approach by his interest in "establishing rapport," he might support the student's protests and allegations and indeed encourage them. Instead of helping the student to become aware of his defenses (defenses which often have led to and sustained the learning failure) the overly-dependent counselor may purposely steer clear of material which he recognizes is uncomfortable for the student. In this way the counselor stays on the student's good side. He remains loved by the student. He does nothing to help the student to solve his problems, but he can feel secure in his knowledge that he, the counselor, is considered well-liked.

Another counselor finds safety in the non-directive approach. He gives the student complete freedom to express his problems and to find solutions for them. He does not contaminate the situation by offering interpretations of the behavior and attitudes of the youngster. In this way the counselor believes that he makes no demands on the student and that, therefore, the child has the opportunity to solve his own problems independently and to develop maturity. But the demandingness of this freedom-in-a-vacuum is nowhere clearer than in the burdens and anxieties imposed on children by "non-directive," noncontrolling, noncollaborating parents. The fact of the matter is that many students need direction and structure. Some students are able to obtain relief when an older authoritative person outlines a simple required schedule of living, defining what to do when, thereby providing a supporting structure which is not available from within himself. It is interesting that many of our college students today complain about too much restriction both at home and at school and yet, at the same time seem to be asking repeatedly for further and more substantial direction. (1) I think that Reik sums this up very well when he says: "Silence is not always golden. It is sometimes made of lead—for example, in conversations in which certain subjects are avoided. Only tact is golden: it prescribes when one should be silent and when one should speak." (2, p. 186)

At the other end of the continuum is the counselor who assumes the omnipotent "holier than thou" attitude. "I am the authority; you are the child; if you will simply do what I say, be what I am, everything will be all right." There are, of course, many variations to this approach. In a sadistic context the counselor may act out his own family problems and transferences to his own father, siblings, etc. Unconsciously he may be directed to dominating and shaming the child who has come for help with his problems. In this way he ensures that the child (father, sibling) is made aware of his inferiority to the counselor.

CONCLUSION

There are, of course, many other attitudes that could affect the counselor in his approach to the student with psychogenically rooted learning problems. Various combinations and layerings of these are likely to be the rule among counselors and teachers, just as among any other group of human beings. It is likely that in one situation the counselor may emphasize one aspect of his personality; in another situation, a different quality may dominate.

I have attempted to point out that interpersonal dynamics play a very important role whenever two people get together to discuss one's problems. The relationship which is established is influenced just as much by the intrapsychic workings of the counselor as by those of the student. The latter comes for help; the former tries to provide it. This is a laudable ambition, but also one which is laden with many potential pitfalls. It is all too easy to perceive oneself as oracular and omniscient—as one who possesses all of the answers leading to mental health and academic success. On the other hand, it is all too tempting to cope with the burden of working with resistant students simply by withdrawing into an overly intellectualized and overly detached attitude. "I am only interested in theory or research."

As I have previously pointed out, much of what I have said here can apply to the classroom teacher who must deal with many sets of personality dynamics at one time. It is for this reason that I like to think of the teacher as a "learning therapist." In an optimal situation the learning therapist educates the child in a psychological environment that is most conducive to development of maximum potentialities inherent in the child.

Ultimately the counselor or learning therapist must recognize his own limitations and shortcomings. If he remains alerted to his own dynamics in relationship to those of the student, they will not impair his working with the student. On the contrary, they represent a potentially significant influence on what is achieved in the counseling or teaching situation.

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A Content Analysis of Current College Reading Manuals

Virginia R. Bahe
University of Wisconsin-Milwaukee

INTRODUCTION

Mounting enrollments, increasingly diverse instructional needs, and sometimes discouraging budget limitations challenge the college reading specialist to select the most appropriate, effective teaching materials available for every dollar invested. This paper attempts to analyze the subskills content of twenty-three recently published comprehensive college reading manuals. Admittedly, the study is incomplete, but the sample is fairly representative of the multi-purpose publications marketed in the past decade.

SUBSKILLS CONTENT

In Table 1 instructional content (I) and practice exercises (P) are indicated for specific subskills as included in each manual. Publication data for each are located in the concluding cross-referenced University of Wisconsin—Milwaukee bibliography. Prices have been omitted because of constant fluctuation, but most manuals in the sample currently sell for less than five dollars.

WHAT IS NEEDED

Instruction-Practice Balance. Table 1 reveals that frequently either instructional content or practice drills for subskills development are omitted. Not a single manual in the sample provides both instruction and practice exercises for each subskill presented within its covers. Flexibility in rate, for example, is recommended in twenty manuals, whereas exercises designed for increasing such flexibility are provided in only ten of these. Conversely, each of the manuals requires detail mastery for successful performance in comprehension exercises, but only eight even attempt specific instruction for comprehending detail.

Quality Control. Probably more crucial than outright omissions is the observation that in some cases the coverage included amounts to little more than lip service. To illustrate, the skimming-scanning drill offered by Cosper and Griffin (21) consists merely of locating in selections previously read, those passages which verify correct answers for items scored as errors by the student. And the Norman manual (79), purporting to develop outlining skills, resorts only to gradually reduced cues in several partially structured outline forms to be completed by the student. All too frequently, then, the student is told "what to do" but not directly "how to do it."

TABLE 1

	Adams	Austin	Brown	Canavan	Carter	Cosper	Gilbert	Glock	Heilman	Herr	Hill	Jones	Judson	Karlin	Leedy	McDonald	Miller	Norman	Patty	Rauch	Sherbourne	Smith	Spache
Bibliography Number	2	6	13	16	17	21	37	38	46	50	51	55	56	58	64	69	74	79	86	90	102	113	119
Rate:																							
Acceleration	IP	IP	IP	I	IP	IP	I	P	IP	IP	IP	P	IP	IP	IP	IP	IP	IP	P	P	IP	IP	IP
Flexibility	I	I	IP	I	IP	IP	I	IP	I	I	I		I	IP		IP	I	IP		IP	IP	I	IP
Mechanics	I		I	I		I		I	I	I		I	I		I	I	I	I	I	I		I	
Perceptual Training	IP		P	IP					IP			P	IP				IP	P	P	P	P		
Skimming, Scanning	I	IP	IP	IP	IP	P		IP	IP	IP			IP	IP	IP	IP	IP	P	IP		IP	I	IP
Vocabulary:																							
Context Clues	IP	IP	P	IP	I	IP	IP	IP		IP	IP	IP	I	IP	P	I	I	IP		IP	IP	IP	IP
Affixes, Roots	I		P	IP	I	I	IP	IP				IP	I		I	I		IP		I	IP		I
Etymology			P		I	I	IP	IP		IP	I			IP	I					I			I
Dictionary Study	I	IP	P	IP	IP		P	P	P			I	I	IP	IP	I	P		IP	I	IP		IP
Notecards or List System	I			IP	IP		I			I	I	IP	I		IP		P		IP	I		IP	I
Synonyms or Antonyms			P		I		IP		P	P							P						IP
Word Attack Skills					I							IP		IP						I	IP		IP
Comprehension:																							
Main Idea	IP	IP	P	IP	IP	P	IP	P	P	IP	IP	P	P	IP	IP	IP	P	IP	P	IP	IP	IP	P
Details	P	IP	P	P	P	P	IP	P	P	P	IP	P	P	IP	IP	P	P	P	P	IP	IP	IP	P
Idea Patterning	IP	IP	P	IP		IP	IP	P		IP	IP		IP	IP	IP	IP	IP			IP	IP	IP	
Paragraph Analysis		IP	P	IP			IP	P		IP	IP		IP	IP				IP		I	IP	IP	
Graphs, Charts		IP		IP	IP		IP								IP	P			IP				
Organizational Skills:																							
Outlining		IP			P		IP						IP	IP	P			IP					
Sequencing	IP		P							IP	IP			IP	IP		P						
Summarizing	IP		P				IP	P			I		P	IP	P	P		IP	IP				
Critical Reading:																							
Tone, Intent		IP	P	IP	I	P		IP		IP	IP		IP	P	IP	P	P	IP		IP	IP	IP	IP
Fact-Opinion	IP				IP						IP			IP				IP		IP	IP		IP
Inferences		IP	P	P	I	P	IP	IP		IP	IP		IP	IP	IP	P	P	P		IP	IP	P	IP
Conclusions		IP	P		I	P		P		IP	IP		IP	IP	IP	P	P			IP	IP		IP
Propaganda Types	IP	IP	I		IP		IP			IP	IP		IP		P			IP	IP		IP	IP	IP
Reasoning Patterns				IP	IP					IP	IP		IP	P	P				IP	IP	IP		IP
Figurative Language	P	IP	P		I										P					IP	IP		
Study-Reading Textbook Approach:	I	I		IP	IP		I	I			I	IP	IP	I	IP	IP	IP	IP	IP			IP	IP
In Literature	I	IP			IP					IP					IP			IP		IP			IP
In Mathematics					IP		I	I														I	IP
In Science					IP		I						IP		IP					IP		IP	IP
In Social Science				P	IP		I						IP		IP		P			IP	P	IP	IP
Content Features:																							
Pre and Post Tests	Both	None	Both	Both	None	Both	None	None	None	Both	Pre	None	Both	None	Pre	Pre	None	None	Vocab	None	None	Pre	None
Test(s) Validation Claimed	No	—	Some	No	—	Yes	—	—	—	Some	Yes	No	No	—	No	No	—	No	Some	—	—	Some	—
Multi-Level Exercises	Yes	Yes	Yes	No	No	Yes	No	Some	Some	No	Yes	No	Yes	No	No	No	Yes	Yes	Yes	Yes	No	Yes	No
Level(s) Indicated	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes	No
Key in Book	Yes	No	Yes	Yes	No	Part	Yes	No	Part	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Key Separate	No	No	No	No	No	No	No	Yes	No	No	No	Removable	Yes	No	No	No	No	Yes	No	Yes	No	No	No
Progress Chart(s)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	No	No	No	No

Research-Based Rationale. Nor is the student often told "why" particular strategies or habits are worth developing. Seldom is research evidence cited to justify what the manuals require of the student. The unfounded myth-like preachments abound, bewildering the alert student with unanswered questions, while the less critical learner glows with impossible expectations only to be later disillusioned. Perhaps the absence of research-based rationale is best exemplified in the incredible prevalence of perceptual training drills which are, at best, of dubious value. Fifty per cent of the sample manuals still include such exercises for eye span development, digit-word recognition, and columnar phrasing.

Specific Subskills. Space allocated to drills of such questionable benefit might better be devoted to more thorough coverage of these somewhat neglected subskills:

1. flexibility
2. retaining new word meaning
3. word attack
4. selecting significant details
5. sequencing
6. interpreting graphics
7. syllogistic reasoning
8. analogy patterning
9. studying in content fields
10. interpreting figurative language

Evidence of Effectiveness. One familiar with the difficulties involved in assessing readability can understand, even perhaps accept, with regrets, the failure to indicate levels of difficulty in many manuals. However, a similar excuse can not account for total omission of statistical evidence which could be generated by adequate field testing with appropriate sample populations to validate the effectiveness of manuals published for improving reading skills. Without such data, the teacher's role in selection of a text is reduced, unnecessarily, to that of an intuitive hunch player dealing in face value. Field testing evidence would motivate students and, inevitably, lead to refinement and more effectiveness in final published products.

CONCLUSION

This brief analysis, then, confirms what most college reading teachers have long realized: no single available manual adequately serves all students in the typical college reading class. It is wishful thinking to rely on a single text, hoping that a new publication, promising to fill the crucial gaps, is just around the corner.

More realistically, the concerned teacher might assemble a multititled collection, cross-referenced by subskills, to serve individual needs while the teacher gets busy to produce what is not yet available on the market. Such an inexpensive library, supplemented with mimeographed handouts is proving remarkably useful at the University of Wisconsin–Milwaukee during the transition from traditional group instruction to an individualized program. The idea, inspired by Barbara Edward's approach (1) has sparked enrollment, improved attendance, soothed harried instructors, and favorably impressed the fiscal dignitaries on campus, as well. The statistical evidence of significantly improved instructional effectiveness is still forthcoming for this eclectic use of publications. But for those interested the following latest revision of the UWM model may help in launching a relatively inexpensive, individualized program for reading, writing, and study skills improvement.

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3. Wallace, James. "The Publisher's Role in the Evaluation of Materials" in *The Psychology of Reading Behavior*. Eighteenth Yearbook of the National Reading Conference, Milwaukee: Marquette University, 1969. Pp. 234-9.

CROSS REFERENCES FOR COLLEGE READING, WRITING, AND STUDY SKILLS IMPROVEMENT

University of Wisconsin–Milwaukee
Reading-Study Skills Center

For quick reference, the numbers below correspond to the numbers of the titles in the accompanying bibliography.

Reading Improvement

Comprehension

Main Ideas

2 (Ch. 7)
6 (Ch. 2)
10 (Lessons 10, 85)
11 (Lessons 45, 58, 68, 110, 134, 147)
12 (Ch. 6)
16 (Ch. 3)
17 (Ch. 2)
29 (Ch. 3)
36 (pp. 34-5, Ex. 3, 8, 17)
37 (pp. 15-21)
50 (Ch. 9, 10)
51 (Area 1, 3)
57 (Ch. 3, 4)
58 (Ch. 3, 5, 6)
64 (pp. 115-41)
66 (Ch. 2, 5, 7, 9)
69 (pp. 295-307)
79 (Ch. 5, 6)
86 (pp. 189-92)
90 (pp. 20-5)
92 (throughout)
97 (pp. 62-9)
98 (Type I, II, Check A)
102 (Ch. 4: parts 1, 2)
109 (pp. 31-3)
115 (Ch. 5)
116 (Ch. 3)
117 (Ch. 4)
118 (Ch. 5, 6)
131 (Lessons 19-24)

Detail

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6 (Ch. 2)
12 (Ch. 6)
35 (pp. 78-80, 96-100, 155-62)
36 (pp. 59-62, 73-6)
37 (pp. 17-8, 22-4)
51 (Area III, A-C)
58 (Ch. 5)
64 (pp. 96-103, 115-41)
90 (pp. 43-8)
98 (Type II)
102 (Ch. 4: parts 1, 3)
113 (Lesson 10)
115 (Ch. 6, 7)

116 (Ch. 4, 5)
117 (Ch. 5, 6)
131 (Lessons 9, 11, 12, 13, 14, 15, 17)

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7 (Ch. 9)
12 (Ch. 6-11)
16 (Ch. 3)
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35 (pp. 46-9)
36 (pp. 34-5, 76-8)
37 (pp. 15-7, 25-7)
50 (Ch. 6, 9)
51 (Area IV)
56 (Ch. 5, 14)
57 (Ch. 3, 4)
64 (pp. 98, 101-2, 106-15)
69 (Ch. 2, pp. 44-6, Ex. 1-8)
87 (Ch. 3)
90 (pp. 14-19)
97 (pp. 80-98)
100 (Part II)
101 (pp. 55-69)
102 (Ch. 4: parts 3, 4)
113 (Lessons 4, 10)
131 (Lessons 19, 21, 23, 25-31)

Paragraph Analysis
6 (Ch. 2)
10 (Lessons 67, 87, 76, 69)
12 (Ch. 6-11)
13 (p. 251)
16 (Ch. 3)
23 (Ch. 6, 7)
29 (Ch. 4, 5, 12)
33 (pp. 7-25)
35 (pp. 46-9, 60-2, 126-31)
37 (pp. 15-8, Ex. 3)
50 (Ch. 5, 9, 19)
51 (Area III: parts G-I)
56 (Ch. 5, 14)
57 (Ch. 3)
58 (Ch. 3: Ex. 19, 20; Ch. 5)
64 (pp. 18-25, 115-41)
79 (Ch. 6)
90 (pp. 16-9)
102 (Ch. 4)
108 (pp. 20-8)
113 (Lesson 10)

Tables, Graphs
6 (pp. 361-4)
16 (pp. 92-6)
17 (pp. 112, 118-9)
35 (Ch. 5: Ex. 2; Ch. 6: Ex. 3)
37 (pp. 121-8)
64 (pp. 76-87, 155-62)
86 (Ch. 10, pp. 179-83)
98 (pp. 131-5)
115 (pp. 165-9)

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35 (pp. 176-8)
57 (pp. 48-50)
131 (Lessons 1, 3, 5, 7, 9, 11, 13, 15)

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12 (Ch. 11)
44 (Ch. 3, throughout)
51 (Area VI-A)
58 (pp. 127-36)
79 (Ch. 11)
119 (Ch. 7)

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6 (pp. 147-69, Ch. 3)
17 (pp. 78-9)
76 (Ch. 11, pp. 294-9)
90 (pp. 31-4)
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7 (Ch. 18)
13 (Selections 11, 14)
17 (Ch. 6)
36 (pp. 149-51)
37 (Ex. 48)
44 (throughout)
50 (Ch. 27)
58 (pp. 127-41)
59 (Lesson 4)
60 (Lesson 4)
64 (Part B, Ch. 7)
76 (Ch. 10, 12, pp. 300-2)
79 (Ch. 11)
86 (pp. 230, 237-8)
102 (Ch. 5)
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115 (pp. 115-19)
116 (pp. 73-83)
117 (pp. 91-105)
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10 (Lessons 7, 21, 53, 61, 73, 121)
11 (pp. 2, 47, 66, 73, 77, 100, 104)
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17 (Ch. 6)
21 (pp. 225-6)
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53 (Inference drills)
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58 (Ch. 4)
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90 (pp. 25-30, proverbs, epigrams)
98 (Type I, II, drills)
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109 (Unit II, pp. 24-30, 63-5)

113 (Lesson 12)
119 (Ch. 5, 7)
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131 (Associational Reading drills)

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56 (Ch. 14)
59 (Lesson 4)
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90 (pp. 112-14)
102 (Ch. 5)
119 (Ch. 7)
131 (Associational Reading drills)

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16 (Ch. 4)
17 (Ch. 6)
38 (Tone, intent drills)
44 (Ch. 6, throughout)
50 (Ch. 11)
51 (Area VI, B, C, D)
52 (pp. 98-9)
56 (Ch. 15)
64 (pp. 88-95)
79 (Ch. 11)
90 (pp. 14-9)
107 (Unit II)
113 (Lesson 12)
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16 (Ch. 1)
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50 (Ch. 3, 4, 8)
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69 (Ch. 3, 6, 7)
74 (pp. 2, 3, 25; Ch. 4)
86 (pp. 47-9)
87 (Ch. 5)
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13 (p. 208)
33 (part 3)
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69 (pp. 331-97)
79 (Ch. 6)
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131 (Lessons 2-7)

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2 (Ch. 1, 4, 10)
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7 (Ch. 1, 2, 4, 5, 10, 16)
16 (Ch. 1, 8)
17 (Ch. 8)
18 (throughout)
21 (pp. 83-5, 133-5)
23 (Ch. 1)
34 (throughout)
35 (Speed in Getting the Point, Speed of Interpretation drills)
36 (Speed of Perception, Speed of Comprehension drills)
37 (Ch. 2)
38 (Rapid Reading drills)
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50 (Ch. 3)
51 (Area VII)
53 (Rate drills)
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56 (Ch. 3, drills throughout)
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66 (Ch. 1, 3, 4, 7, 10, 12)
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90 (pp. 8-13)
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101 (Ch. 1, 2, 6-9, 11, 13)
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7 (Ch. 6)
13 (p. 192)
16 (Ch. 5, 6)
17 (Ch. 7)
29 (Ch. 2)
36 (pp. 130-6)
38 (Skimming drills)
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56 (Ch. 6)
58 (Ch. 7)
66 (Ch. 8)
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69 (Ch. 2, 6, pp. 355-405)
79 (Ch. 8)
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97 (Ch. 2, pp. 49-61)
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102 (Ch. 1, 2, 6)
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119 (Ch. 1, 2, 3)
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12 (Ch. 2, 4, 5)
14 (throughout)
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17 (Ch. 5)
21 (throughout)
22 (throughout)
23 (Ch. 3)
24 (throughout)
25 (throughout)
27 (throughout)
29 (Ch. 13)
32 (Lesson 28)
35 (throughout)
36 (throughout)
37 (Ch. 4, Ex. 27-32, 40, 41)
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43 (throughout)
46 (Sections 5, 12)
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58 (Ch. 2, 3; Ex. 9, 16-8)
64 (pp. 51, 165, 374-8)
66 (Ch. 6)
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78 (throughout)
79 (Ch. 7)
80 (throughout)
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90 (pp. 36-41; Key Words and Concepts drills; Ex., Part II)
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97 (pp. 199-218, 300-5, 379-423)
101 (Ch. 1-12)
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112 (Brooks 1, 2, 3)
113 (Lesson 11, pp. 125-31)
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Readability Levels of Selected Mass Magazines From 1925 to 1965

Jean C. Barganz and Kenneth L. Dulin
The University of Wisconsin

Americans are a magazine reading people. At the turn of the century there were approximately 250,000 magazine buyers; by 1960, however, the number of households purchasing magazines had risen to beyond 40,000,000—eighty per cent of the United States total (8). The current *World Almanac* (12), using statistics based on average circulation per issue during the six months prior to January 1, 1968, listed eighty magazines that exceeded the half-million circulation mark. The *World Almanac* also named fifty-three magazines that went over a million in circulation, twelve that topped the five-million mark, and two, *Reader's Digest* and *TV Guide,* that had over twelve million paid subscribers. Since most magazines pass through the hands of several others besides the initial buyer, the total readership implicit in these figures well exceeds the actual circulation statistics.

Despite this, the popular magazine has a low level of status with educators. Few public school courses of study include magazines as regular curricular fare, and those that do usually specify only the "high-brow" magazines (e.g., *Atlantic, Saturday Review, Harper's,* etc.). Opponents of the use of mass magazines in the classroom have usually based their criticism of the medium upon its being simplistic, shallow, and unchallenging for the student reader. So accepted, in fact, has this condemnation been, that the early readability researcher often took magazine materials as *ipso facto* examples of very low reading.

In recent years, however, at least two studies have appeared which seem to refute this generalization. Allias (1), using the Yoakam formula, determined that selected mass magazines ranged in difficulty from a reading grade level of 8.0 to 13.6, with the median difficulty of the overall list 10.8. Dulin (2), after applying the Flesch, Farr-Jenkins-Paterson, Gunning and Fry formulas to the lead articles of fifteen popular magazines, reported grade levels of 13th, 14th, 12.2, and 10.9 respectively. Both these studies suggested that the readability levels of these magazines have risen over the years. For these reasons, the following study was undertaken.

METHOD

Selection of the Materials. From within the twenty-five top-selling magazine titles listed in the *World Almanac* (12), four were picked as representative of the following three categories: general interest or family magazines, women's magazines, and men's magazines. Each magazine was designated as within a particular category in terms of (1) a personal review and judgment of its content, (2) what the editors reported as their intended audience, if this information was available, and (3) the market guides furnished by the magazines that could be found in writers' trade journals.

The magazines chosen as representative of general interest or family magazines were *Reader's Digest* and *Saturday Evening Post*. *Reader's Digest* has a circulation of 17,336,168, *Saturday Evening Post* listed 6,811,418 subscribers (12), and both treat subjects that would appeal to the average reader of either sex.

Ladies' Home Journal, with a circulation of 6,779,059 (12), was picked to represent the women's magazines. The *Ladies' Home Journal* publishes articles that appeal to women of all ages and vocations from the young single career woman to the older married housewife with children.

Chosen as representative of men's magazines was *Popular Mechanics*. Its articles appeal to a variety of men—from the high school dropout to the mechanically-inclined college graduate.

The fifth magazine selected for the study was *Harper's*, which is considered a "class," or in Kitson's (7) terminology, a "high-brow" magazine. Its articles, usually written by scholars in the field, cover a variety of topics. The magazine is slanted almost exclusively to persons who have the reading ability of college graduates.

The Readability Measure Employed. In this study the Flesch Reading Ease Formula was used. The use of several adult formulas was considered, but in light of the fact that Dulin (2) found that the four major adult-level readability formulas (Flesch Reading Ease Formula, Farr-Jenkins-Paterson Revision of Flesch. The Gunning "Fog" Index, and the Fry Readability Graph) ranked materials on an easy-to-difficult continuum about equally well, one formula was judged to be sufficient. The Flesch Reading Ease Formula combines two factors to measure the range of difficulty in materials: (1) the average number of words per sentence, and (2) the number of syllables per one hundred words. It is the formula most often used in measuring the readability of adult materials, and has the most research available on it.

Sampling of the Content. The lead "serious" article—nonfiction and not of a satirical or humorous nature—was selected. The magazines measured were the first January issue at five-year intervals beginning with the year 1925 and going through the year 1965. There was one exception; the January issue of the *Ladies' Home Journal* for the year 1925 was unavailable, so the July issue of that year was substituted.

According to Flesch, three to five samples for an article are sufficient provided they are picked at random. In this study every 100th, 200th, 300th, etc., word to the 900th word was marked. Then, beginning at the first sentence after the 100th, 300th, 500th, 700th, and 900th word, five 100-word samples (plus the remainder of the ending sentence) were taken and pooled.

As explicated by Flesch, this formula renders only broad-range difficulty levels. Dulin, (2) however, has calculated an interpolated and extrapolated scale to give more precise levels. Grade levels in Table 1 are in terms of this scale. Table 1 reports the readability levels found for the lead article in each magazine.

RESULTS AND DISCUSSION

The results of this study suggest that the long-held generalization that mass magazines were of an overall low reading level is false. Even as far back as 1925, lead articles were found to be of a difficulty level requiring at least high-school reading ability. Fifty-five per cent of the articles selected, in fact, required even greater than high-school level reading skills.

An obvious limitation of the study should, of course, be noted here. If samples had been taken from other than "lead" articles, certainly lower readability scores might possibly have been obtained. Even a cursory examination of typical magazine format indicates a large range of difficulty within any given issue. Thus, the point to be made is not that magazine article is *all* difficult, only that it is definitely not all easy. Since the magazine buyer market is comprised of readers with a large range of reading abilities, editors have undoubtedly realized that editorial content must be provided to suit this entire range. This fact suggests several implications for the teacher of secondary and/or college-adult reading:

1. Certainly, instructors of reading need not feel apologetic about using popular magazines in their teaching. In addition to the appeal this medium has to the general reader, their intellectual content, too, appears to be respectable.
2. Since magazines generally offer a broader range of interest areas than do traditional curricular materials, these can safely be catered to without necessarily sacrificing quality.
3. Since most adults will read magazines broadly during their post-schooling years, teachers certainly should help students develop skills and taste appropriate to the use of such material.
4. Finally, perhaps we teachers have often succumbed to the cardinal sin of the educated: smugness. Instead of helping prepare readers to handle their reading needs as adequately

TABLE 1

READABILITY LEVELS OF SELECTED MAGAZINES AT FIVE YEAR INTERVALS: 1925 TO 1965

	1925	1930	1935	1940	1945	1950	1955	1960	1965	Mean 1925-1965
Reader's Digest				General Interest Magazines						
Flesch Score	42.3	47.1	48.0	56.4	48.5	56.0	43.0	47.8	48.4	48.6
Grade Level*	14th	13th	13th	11th	13th	11th	14th	13th	13th	13th
Saturday Evening Post										
Flesch Score	53.3	60.1	43.6	53.5	50.3	50.2	41.7	47.9	55.3	50.7
Grade Level*	12th	10th	14th	12th	12th	13th	14th	13th	11th	13th
Popular Mechanics				Men's Magazine						
Flesch Score	47.6	52.0	51.9	46.3	57.9	51.1	49.8	55.3	45.8	50.9
Grade Level*	13th	12th	12th	13th	10th	12th	13th	11th	13th	12th
Ladies Home Journal				Women's Magazine						
Flesch Score	35.6	62.1	43.7	50.5	36.8	55.0	50.5	59.0	49.4	49.2
Grade Level *	15th	9th	14th	12th	15th	15th	12th	10th	13th	13th
Harper's				"High-Brow" Magazine						
Flesch Score	48.3	59.6	44.6	56.0	44.3	34.6	51.5	40.7	46.8	47.4
Grade Level*	13th	10th	14th	11th	14th	16th	12th	14th	13th	13th

* Interpolated and/or Extrapolated from Flesch Ratings

they have perceived and felt them, we have come close to attempting to impose *our* tastes upon them. If students wish to read material that "tells it like it is," who are we to deny them that right?

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"Dropout or Graduate? A Synthesis of Three Studies On the Degree of Success of American Indian High School Students in the Southwest"

Willard P. Bass and Marian J. Tonjes
Southwestern Cooperational Educational Laboratory
Albuquerque, New Mexico

Formal Indian education predates the American Revolution. In 1568 the Jesuits established in Havana, Cuba, a school for the Florida Indians. (3) Fifty years later the Council of Jamestown, Virginia, voted to educate Indian children, (6) but little action was taken until 1697 when an Indian school was formed in Williamsburg in connection with the newly founded College of William and Mary. (4) In the 1700's colleges such as Dartmouth and Hamilton were an outgrowth of Indian Schools. (5) The federal government launched its own educational system in the 1870's, of which the best known was the Carlisle Indian School. Run along military lines, with harsh discipline, it set the pattern for government Indian education for the next fifty years. Public school education for all Indians is a recent innovation, particularly in the Southwest.

PROBLEM

Four questions that have been posed repeatedly in recent years by those interested in Indian education are (1) What is the dropout rate among Indian students? (2) What happens to Indian youths after they graduate from high school? (3) What is their level of academic achievement? (4) What changes could be made to help the Indian student stay in school and prepare for a career?

To obtain answers to these questions, Southwestern Cooperative Educational Laboratory in Albuquerque, New Mexico, at the request of the Bureau of Indian Affairs, conducted in 1968 a Dropout Study, a High School Graduate Follow-up Study, and a four-year longitudinal study of academic achievement (1966-70).

PROCEDURE

Dropout Study

The first study on the dropout rate included 182 schools, of which 143 were public, 22 private, and 17 Bureau of Indian Affairs, and was conducted in Arizona, Nevada, New Mexico, Oklahoma, Southern Colorado, and Southern Utah.

Schools enrolling Indian students in the six state region submitted lists of names of all Indian students enrolled in 8th grade in 1962, and 9th through 12th grades in each succeeding year to graduation in 1967. All names were alphabetized in a master computer list. The sample, randomly selected, totaled 1217. This was representative of the various tribes, types of schools, and communities in the area. The computer lists facilitated tracing students, even when they disappeared from a school's lists, and *every* student was traced to eventual point of dropout, graduation, death, or continuation in school. (7)

Graduate Study

Using the same population as the Dropout Study, a list was compiled of all Indian graduates in 1962. The total sample was 691, of whom 384 were personally interviewed in 18 states and Washington, D.C. Criteria for qualifying as a subject included being one-fourth or more Indian ancestry, and considering oneself an Indian.

Instruments used were the Interview Guide and Questionnaire developed by Northwest Regional Educational Laboratory for a similar study. By using the same instruments comparable data could then be provided with a 12 state area. (2)

Academic Achievement Study—(A Second Year Progress Report)

This longitudinal study is being conducted in Alaska, Arizona, Nebraska, New Mexico, Oklahoma, South Dakota and Utah. Measuring instruments for academic achievement are the following: (1) California Achievement Test (C.A.T.), Forms Y and W, 1957—Pre and Post; (2) California Test of Mental Maturity (C.T.M.M.), short form, Level 4, 1963; (3) Questionnaire (Northwest Regional Educational Laboratory); (4) Semantic Differential (Southwestern Cooperative Educational Laboratory); (5) School interest Inventory, William Cottle, Houghton Mifflin Company, 1966.

To compare academic achievement of the various groups post-test California Achievement Test (C.A.T.) raw scores were used as a criterion, and differences in group means were tested by analysis of covariance. The California Test of Mental Maturity (C.T.M.M.) intelligence quotient scores were used as a scholastic aptitude control, and the pre-test C.A.T. raw scores were used as a prior achievement control. (1)

FINDINGS

Pertinent findings from the three studies have been synthesized to provide information about the Indian high school student and graduate in the Southwest.

Family Characteristics (refer to chart)

1. 85% of the Indian high school students in the Southwest live on reservations, excluding Oklahoma, which does not have reservations.
2. About 80% are full bloods.
3. For the majority, an Indian language is the primary language of the home.

4. About one-half the homes have T. V. sets, but fewer than one-half receive a daily newspaper, and only one out of six has a telephone.
5. 20% of the parents have had no formal schooling, and only one parent in seven is a high school graduate.
6. One father in three earns more than $3,000 per year. Only about one-half are regularly employed.

High School Student Characteristics

1. Absenteeism is high.
2. A majority would rather work with mechanical things than read or write stories, and prefer athletics over other school activities.
3. The dropout rate is high. While the national high school dropout rate is 23%, 39% of the Indian students in the Southwest, both male and female, drop out between 8th grade and graduation, the greatest attrition occurring between 8th and 9th grades, where dropout is about 12%.
4. Academic achievement is low. Total battery scores on the California Achievement Tests show 9th graders ranking at the 27th percentile, with academic retardation of one year. 12th graders had dropped to the 14th percentile, with three years academic retardation. Reading followed this overall pattern. Boys demonstrated a slight superiority over girls in reading, while girls scored higher in language.

Post High School Experiences of Graduates (refer to preceding chart)

1. 74% of the high school graduates of 1962 continued their education, mostly in vocational-technical programs.
2. 51% completed a post-high school training program, with 44% completing vocational-technical programs, and only 7% completing college.
3. When the tribal language was never or rarely spoken in the home, 89% continued their education. Only 60% continued when the native language was dominant.
4. At the time of the interview, more than six years after high school graduation, about two-thirds were working for pay, but only one in eight was in a professional position. There was only one college graduate engineer and no doctors or lawyers. Teachers comprised the largest group of professionals.
5. The value of a high school education for these people is demonstrated by the low unemployment rate of 8% for high school graduates.

Retrospective Opinions of High School Graduates

1. A majority of those who continued their education expressed satisfaction with the course of action they had taken. A majority of non-continuers expressed regret over their decision.

2. Graduates named parents, then teachers, as the sources of most encouragement to continue their education.
3. One-half the students in the sample felt they had received inadequate information on educational and employment opportunities while in high school.
4. The need for more vocational education was most often mentioned by non-continuers, while the continuers asked for more emphasis on academic subjects, ,improved teaching, higher scholastic requirements, and more guidance and counseling.
5. The graduates said the chief reasons that many of their classmates did not graduate were lack of personal interest or motivation, lack of home encouragement, and poor financial or social conditions at home.
6. More than nine out of ten of the graduates said they had never experienced prejudice in high school.
7. A large majority believed it important to be able to speak their tribal language because of the desirability of communicating with older people of the tribe.
8. More than three-quarters of the graduates considered themselves successful.

RECOMMENDATIONS

The almost universal problem hindering or defeating the Indian student in the Southwest is the language handicap. He is deficient in the basic communication skills of speaking, listening, reading, and writing.

From interpretation of the data of the three studies, it is recommended that schools should have:

(1) Better and more widespread programs of teaching English as a second language;
(2) Intensive instruction through the grades in developmental reading, writing and study skills;
(3) More culturally relevant curricula to make school experiences more meaningful and to ensure pride in one's heritage;
(4) Special training for all teachers and counselors of Indian children;
(5) Better content and increased number of vocational education courses;
(6) Better academic preparation and orientation for college-bound students with more intensive counseling and tutoring after college enrollment;
(7) More Indians involved in school management.

Further in-depth studies of the Indian dropout could include examination of causal factors and indicated changes. Because of the high dropout rate discovered at the 8th-grade level, we could profit if any continuing investigation included lower grade levels.

Improving educational opportunities for Indian students is a worthy goal. The results of these three studies point up the great need for prompt and concerted action on the part of involved educators.

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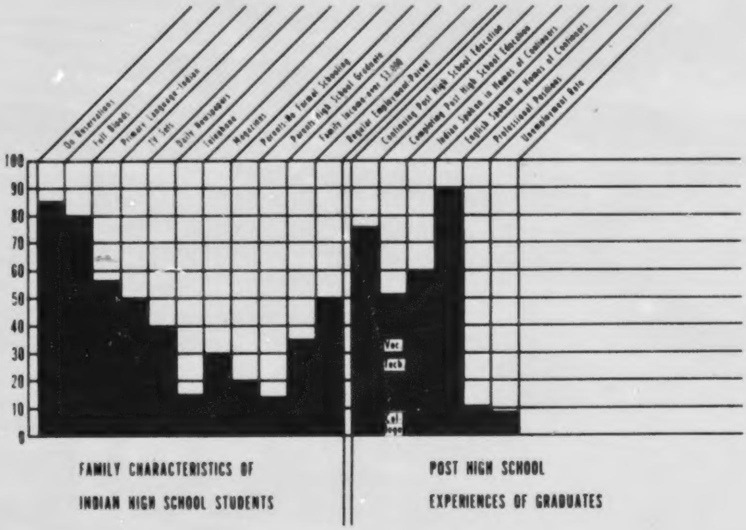

Developing an Effective Listening Program

Dorothy Kendall Bracken
Southern Methodist University

INTRODUCTION

Ethel Beryl Miller (9) writing in the December, 1968, issue of *Elementary English* wrote that "A society that depends heavily upon what is heard on radio and television and on reading news items garnered by reporters, who, supposedly, listened well to the reporting of it; a society that literally puts the lives of people into the hands (ears?) of twelve jurists and trusts them to listen accurately and critically in order to make a judgment; a society that is being constantly bombarded with oral communication of the propaganda type needs to be well-trained in listening."

Perhaps it would be well to consider: (1) the growth of interest in listening throughout the past several decades, (2) the relation of the two language arts, listening and reading, (3) the listening skills, per se, and (4) the characteristics of a good listening skills program.

INTEREST IN LISTENING

Exactly forty years ago at a state educational conference in Ohio, Paul T. Rankin (11) spoke on "Listening Ability." His presentation is recorded in *Proceedings of the Ohio State Educational Conference*, published by the Ohio State University Press. Among other things Rankin said, "Listening is the most frequently used language activity, the average adult spending approximately three times as much time listening as reading."

In spite of Rankin's impressive statement, for decades listening, as one of the language arts, remained the *neglected* language art, notwithstanding the fact that during the 1940's many prominent educators wrote on the subject of the interrelationship of the language arts. Listening tests also were slow in making an appearance. It was not until 1953 that Harcourt, Brace published the *Listening Comprehension Test* by James I. Brown and G. Robert Carlsen (2), although in the meanwhile Durrell and Sullivan (3) had used listening as a means of predicting reading ability when they devised a *Reading Capacity Test* based on listening. In 1957, a book entitled *Are You Listening?* was written by Ralph G. Nichols and Leonard A. Stevens (10), which stated in the introduction: "Incredible as it may seem when we think about it, this book, to our knowledge, is the first close analysis ever made of the oldest, the most used, and the most important element of interpersonal communication—listening."

The interest educators had in listening before the 1960's was, of course, not limited to the few items enumerated above. In fact, during the 1950's and early 1960's a great deal was said and written about various aspects of listening. Research was begun in earnest and doctoral dissertations were written (Don Brown, "Auding as the Primary Language Ability" 1954; Ware Marsden, "A Study for the Value of Training in Listening Achievement in Reading" 1951; Walter Frances Stomer, "An Investigation Into Some of the Relations Between Reading, Listening and Intelligence" 1952). Frequently, during these years, periodicals carried articles on listening skills, as for example, "Improving Reading Through Listening," which appeared in 1957 in *Elementary English* written by E. L. Furness. (4) Furthermore, curriculum guides were revised and teachers were given suggestions as to how listening skills might be taught. Much of the activity perhaps was spurred by estimates which said that elementary school children spent 57.5 per cent of their time listening.

With the widespread interest and professional activity which occurred during the two previous decades, it is difficult to understand that in 1967 in the fourth edition of their comprehensive text book, *The Improvement of Reading*, Strang, McCullough and Traxler (12) wrote: "By the time children have completed the sixth or seventh grade, their reading comprehension tends to surpass their listening comprehension. Of course, they do receive continuous instruction in reading but scarcely any in listening." To this educators agreed, that is, that in general classroom teachers were spending a minimum amount of time, if *any* at all, improving the listening skills of their pupils.

Why is this true at the end of the 1960's? Perhaps teachers need more insight into the relation of listening and reading, more knowledge of the characteristics of the listening skills, and some descriptions of listening activities designed for classroom use.

RELATION OF LISTENING TO READING

For years oral language has been considered the foundation of reading, and listening is the "intake" phase of oral language.

If a child has not listened to, discriminated between, and understood the sounds for which symbols stand, how can he comprehend sounds which the symbols stand for? As has been indicated, both listening and reading demand thinking in the sound-symbol-understanding process. Organizing sound and symbol is an integral part of understanding what is read.

Even if research did not confirm the relation of listening to reading, practical classroom experience attests to the connection. Let a pupil listen to a story, either as the result of the teacher's reading orally to him or because he has heard a taped version, and what happens to his ability to read that story? He is more successful than if he had not listened to the story. The listening furnishes an operational base for reading.

As reported by numerous educators, research indicates that improving listening skills improves reading skills. Kelty (6) reported when specific skills were practiced in listening, the same skills in reading improved, the skills in this instance being identifying main idea, determining supporting details, and drawing conclusion. Lewis (7) indicated the same results when the following skills were considered: getting general significance, noting details, and predicting outcome. Lubershane (8) suggested that advancement in reading achievement in an experimental group over the progress of the control group suggests that listening training given to the experimental group, but not to the control group, had contributed to the reading progress of those in the experimental group. Hollingsworth (5) reported other research studies in which the effects of listening have a direct relation to progress in reading, and concluded, "Many of these research reports show that through improvement of listening abilities reading can be improved. Listening does have a positive effect on reading achievement."

THE LISTENING SKILLS

Authorities are agreed that young children's capacity for learning new sounds is higher than that of older people. Is it not true that a child will learn to speak fluently the language he hears, regradles of race or nationality? But when adults learn a language different from their native tongue they usually speak with "an accent." Fixed habits of listening as well as fixed habits of speech are the inhibiting factors. Ineffective fixed habits of listening will remain so unless the pupils are given specific instruction in listening skills, the best training in listening taking the form of a sequential skills program, just as training is offered in reading, speaking, and writing.

Unfortunately if a child has satisfactory hearing acuity, many teachers consider he has no listening problem. But hearing and listening are different. A child may hear sounds but not be able to listen to sounds, discriminate between sounds, comprehend, and interpret those sounds. He may hear a teacher give directions but be unable to listen to the directions. At a higher level, he may hear the teacher make an assignment but, because of the lack of an appropriate listening vocabulary, he may not be able to understand or interpret the assignment. Thus, the levels of listening development may be (1) hearing acuity, (2) discrimination among sounds, (3) comprehending the ideas the sounds represent, and finally (4) interpreting those ideas.

Understanding and interpreting is what good listening is all about, but like good reading, expert teaching of listening requires *specific teaching* of many skills. For example, because of individual differences among pupils, a fourth-grade teacher might need to develop the following listening abilities: discriminating between sounds, recalling facts, following directions, remembering story sequence, determining main idea and details, noting cause and effect, increasing visualization, practicing inference, distinguishing between fact and opinion, developing vocabulary, hearing organizational pattern, listening critically, listening creatively, listening for a specific purpose.

Teachers have many opportunities of promoting good listening habits. First of all, they need to set a good example by practicing the correct attitude and way of listening. Next, by encouraging *audience* oral reading (when the pupil has had an opportunity of previously reading a story and then orally *interprets* it to his friends, or a small group, or the entire class as the others *listen*), the teacher can structure purposes for listening, thus providing a situation in which a child reads orally to an audience and, at the same time, the audience has a worthwhile listening experience. Likewise, the teacher in reading to pupils herself may in many specific ways point out such matters as the likenesses and differences in words. And, finally, the teacher develops and extends the pupils' listening vocabulary, adding new and interesting words as she continually tunes their ears to the sound, the rhythm, and the cadence of the language.

CHARACTERISTICS OF GOOD LISTENING PROGRAMS

How can the classroom teacher improve listening among her pupils (and, therefore, reading)? She can, of course, practice the fundamental principles of good teaching procedures, such as (1) test before teaching, in order to find out "who" needs "what," (2) use motivating devices, such as attention getters, (3) give specific instruction, (4) use the example as a proved method of teaching, (5) teach vocabulary, (6) give a purpose for listening, (7) give opportunities for pupils to practice specific listening skills, (8) give pupils a chance to check their own responses, (9) stimulate pupils critical thinking, (10) use extended activities to reinforce initial teaching, and (11) finally, retest to evaluate progress made.

SUMMARY

"Developing An Effective Listening Program" has thus presented a listening program for classroom teachers including (1) interest of educators in the skill of listening (the neglected language art), (2) the identifiable listening skills, and (3) the ways classroom teachers carry on listening programs, not only for the improvement of listening, per se, but also in support of the reading program. The listening program can give added meaning to and support the reading program. As in reading, practical ways of discovering the listening skill needs of pupils is essential. Pupils vary as widely in their listening proficiency as they do in their reading achievement. After the listening skill-needs have been established, the teaching of specific skills, through the use of interesting materials, can correct weaknesses of those who are functioning ineffectively and can give guidance to those whose listening performance is normal or superior.

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College Reading and Television's Instant Image

Hazel Horn Carroll

Southern Methodist University

We are living in a world of the instant image where there is mobility and immediacy in the receiving of knowledge and information. There is only the slightest delay between the happening of an event and its reception on the television and radio network newscasts. And the time is fast approaching when the newsman will carry on routine assignments his television camera in his hand and a miniature transmitter on his back which will be capable of sending back pictures to the studio and on to the home screens. This capability was demonstrated at last year's political conventions.

Those interested in the improvement of college reading skills will be concerned, logically, with the effect of the rapid progress in the communications field and other areas of endeavor on the reading habit itself and on procedures used in college courses designed to improve it.

One conclusion that can be reached in considering the vast amount of information being received in media other than print is that reading will be more necessary than ever. Students and others will need to read in depth to interpret and evaluate all the ideas being gained or received. Strang and Bracken (1) observed this when they said, "Critical reading is a means of combating the propaganda which is found in the radio, television, and motion pictures." Instruction in college reading courses will need to adhere to basic principles in the teaching of reading which will lead to efficient reading. Gainsburg (2) states this conclusion in *Advanced Skills in Reading* when he says, "Modern conditions have brought into focus the necessity for reading, not just casually, but with considerable depth of understanding."

In such an age of marvelous progress and moonwalks, it is to be expected that students will be looking for a secret, a breakthrough, or a magic quick formula for everything. This trend can be seen in the thinking of college students when they greet their reading improvement instructors with such questions as "How fast will you teach me to read?" and "How fast do you read?" Schick (3) has observed such an attitude, too, when in discussing college reading improvement programs he wrote, "Similarly, to most inexperienced but interested laymen, the only important criterion of a reading improvement program, whether it be in secondary school, college or adult educational program, is the opportunity it provides for the student to increase his speed considerably."

It can be assumed that such modern times have been responsible, in part, for the large number of speed reading courses being offered to the public. Probably claims of unusual gains in rate of reading made by many of these courses have helped to formulate such questions from students as these quoted.

Witty (4), in writing about reading improvement programs, warns of too much preoccupation in some such courses with rate of reading. He says, "But why should one skill, speed of reading, receive the lion's share of the time?" He states, too, "The writer believes also that skills such as critical reading should be given greater attention in reading improvement programs. Studies have shown repeatedly that few pupils and adults, too, read critically. Too often they accept without question the printed page, failing to examine the authenticity and accuracy of presentations." In the same article he reminds us, " 'We read with the back of the head as well as the front' is a statement sometimes made to indicate that reading is a two-way process involving the material read and the individual. His response in reading is a most important aspect of the process."

There is not time to examine the authenticity or to give a "back of the head" response to information received from the fast-moving communications media. Thus the already stated conclusion of the need for in-depth reading to do these jobs is spotlighted. To improve the achievement of college students in doing this kind of reading will require skillful and proved procedures of instruction.

Basic principles in the teaching of reading, such as building readiness and purpose for reading a selection, developing vocabulary, employing effective questioning, and promoting flexibility with different levels of comprehension, should not be "college drop-outs." They should be kept as treasured antiques, but they can be refurbished, refinished, and supplemented with new and innovative ideas. This means, then, that innovations must not be "college rejects." This philosophy accepts the effective new.

An example of up-dating the time-honored practice of teaching students to raise questions in order to establish inter-action between the reader and the writer was reported by Santeusanio (5). The approach was called "RAMA" or "Read and Meet the Authors." Arrangements were made for the authors of articles in the school newspaper to visit the classrooms of college freshmen reading classes. Students asked the authors such questions as "What is the main idea in this article?" and "What conclusions and inferences can be made from this selection?" It was thought that these face-to-face experiences helped students to think and read critically.

Another valued antique teaching technique is the art of questioning and of training students to raise questions during their reading. Weaver and Kingston (6) concluded, after a review of research on this, that teachers in reading improvement courses would want to continue to use manuals which ask questions at appropriate points in the text to guide reading and improve comprehension. This suggestion was made since no studies had shown that students could be taught to raise their own questions effectively. Manzo (7) noted their conclusions and developed an innovative technique called "Re Quest Procedure" designed to improve student questioning practices. This procedure provides for students and teacher to read the same selection and ask each other questions. Manzo stated that this is still an experimental technique and asked for reactions to it in his report. It will be interesting to see if this approach will become a means of refurbishing a long-used teaching practice.

The same media which spotlight the need for teaching students to read to interpret and evaluate what they see and hear can be used to help in that instructional job. The controversial television speech of the Vice-President of the country concerning news management and the many replies to his talk furnished an exceedingly lively opportunity for identifying and analyzing evaluative techniques. How much more relevant could one be than to use texts of speeches being discussed all over the country? It is easy to assume that such relevance would result in effective teaching of those skills under consideration. Also, television can help in teaching these skills if such a telecourse as *Communications and Education* is shown to students. This course includes such lessons as "Propaganda: Its Power" and "Propaganda: Meaning and Significance." (This telecourse is available from Great Plains National Instructional Television Library.)

The era of the instant image makes the building of readiness a most imperative need. Visualization and communication through it are an integral part of television viewing. A reader will have to have his background information and motivation mustered sufficiently in order for the printed page to communicate to him satisfactorily. The television medium can assist a teacher in building this enlightened approach to an article. Programs and events widely viewed can be related to a selection. When such programs are not generally seen, schools with random-access television systems can dial in programs to help build needed concepts.

These times, then, of rapid communication offer a challenge to teachers of reading in college. Reading improvement courses will need to meet this with continued and up-dated efforts to teach all the basic skills of efficient reading. Speed will not be excluded since it is most successfully taught along with the other skills. But the fast trend of the times should not be allowed to produce a preoccupation with speed. Television and radio have intensified the need for critical reading, and they should be harnessed and used in meeting the need.

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Preparation of Reading Therapists for the Junior College Level

Homer L. J. Carter and Dorothy J. McGinnis
Western Michigan University

In our time there is a growing opinion which holds that an education beyond high school is a right, subject to demand. Many students enrolled in our colleges and universities are unprepared for academic achievement. Large numbers of students have marked deficiencies in the language arts, especially reading. Junior college personnel, well aware of these inadequacies, are instigating reading programs for college students, and in doing so they are faced with the task of finding well prepared reading teachers who understand and can meet the emotional as well as the instructional needs of the students. It is the purpose of this paper to set forth some specific suggestions concerning the selection and preparation of reading therapists for the college level. Such preparation must include an understanding of the changing academic world, an awareness of the many needs of today's college students, and a knowledge of various teaching methods and materials which can be used in reading improvement courses. A background in clinical and abnormal psychology along with an understanding of a rigorous approach to diagnostic techniques is recommended.

THE CHANGING ACADEMIC WORLD

Marked changes are being initiated in many junior colleges and in institutions of higher learning throughout the United States. Entrance requirements have been modified so as to permit environmentally disadvantaged individuals to enroll for regular college credit. Many of these students have deficiencies in the language arts and especially reading. Vocabularies and common concepts generally required for an adequate understanding of science, social studies, and literature are lacking. These intelligent young men and women do not know how to use their books effectively, and some lack a zest for learning in the academic world. In spite of these disadvantages they are enrolled in college classes and, unless their instructional and emotional needs are met, their frustrations can increase and explosive reactions may occur. Added to this is the conviction on the part of many students that colleges are oversized, dehumanized, computerized institutions where instructors have little interest in their students. Some of these young people question the viewpoints of their instructors and distrust the values of adults. They reject present social standards and demand more than promises of a better world. They are impatient visionaries believing themselves to be realists. Some suggest that sustained effort recommended by their instructors is a middle class value which should not be imposed upon them by their teachers. Such characteristics of our changing academic world cannot help influencing the preparation of reading therapists.

NEEDS OF STUDENTS

The student of today who questions the values of his elders and is dissatisfied with their way of life welcomes new experiences and bold adventures into the unknown. Even though the worth of these experiences may be unappreciated by the youth of today, these activities provide experiential background which can be utilized in the identification, interpretation, and evaluation of ideas and concepts of value in a changing society. What they have seen, heard, and experienced will affect their perceptions. The learning process is inevitable. It can, however, be enhanced by stimulation, relevant instruction, and guidance. Mental content in a variety of subject matter fields is an imperative need of modern youth.

It is essential that the student acquire a zest for learning, a hunger and thirst for information and new points of view which he can apply in the solution of his problems and in the realization of his goals. In some instances he is unwilling to accept the imposition of prerequisites and course requirements. He believes that he knows what he wants and he insists upon freedom to accomplish his objectives. He is not interested in the improvement of his reading skills unless he can be shown that their attainment will result in better grades accomplished with an economy of both effort and time. The young student of today needs an opportunity to utilize a goal-oriented process in which he can actually see the purpose and value of his labor. In pursuing his projects he meets difficulties, experiences needs, and learns to appreciate guidance. This realization is indispensable to the student's academic and social success. Progress will be made when each individual attends to his own work and has a personal incentive to do so.

College students need to be accepted and appreciated by their instructors as persons with likes and dislikes, fears and worries, and with purposes and plans unique to themselves. They are people and not just students whose achievement must be evaluated in terms of marks arranged "according to a normal curve of distribution." Like people in the neighborhood, in social clubs, and in business and professional organizations, they need to feel important. They need someone to talk with them of their successes and to understand their failures. They need a leader and a teacher who thinks they can learn and expect them to do so. Rosenthal (2), in his study *Pygmalion in the Classroom*, has shown that this philosophy can be applied with success. It can become operational if the instructor knows his students and is able to be patient with them.

Many college students at all levels need to develop more adequate language skills. Some of the more essential ones are briefly summarized.

- Development of concepts and adequate vocabularies.
- Identification of main ideas in paragraphs and chapters.
- Construction of questions to be used in reading for a purpose.
- Utilization of concepts so as to make them one's own.
- Concentration of effort.
- Expression of ideas effectively.
- Determination of what to accept and what to reject.
- Treatment of words with respect in manner of use and spelling.
- Understanding the development and organization of ideas expressed in sentences, paragraphs, and longer thought units.

These and other skills must be integrated in the student's goal-oriented activities and should not be developed in isolation.

The college student of today needs to discover how to make effective use of his textbooks and the various forms of reference materials as he attempts to accomplish his goals. He needs to make reading his way of life and should not be content in merely learning about it. He needs to identify problems, the solutions of which are relevant and material to his success and adjustment. He needs to know that reading is an integral part of learning and study .Furthermore, he needs to understand that learning to read is a continuous process and, irrespective of previous academic attainment, effective reading must be constantly developed for no student can learn today what he will need to know even in his immediate future. New knowledge is developing rapidly.

PREPARATION OF THERAPISTS

The selection and preparation of reading therapists for college students are topics worthy of special consideration. Social and educational conditions are being modified, and a new breed of teacher is being required in the classroom. The teacher of reading must do more than dispense information, provide for practice, and test for mastery. His class must be a powerhouse and not merely a repository of information and mechanized equipment. He must turn his students on, provide information when and where needed, and guide each student to the realization of the student's goal. If the therapist is to realize this objective, he needs an experiential background in the life sciences and an aptitude in both diagnosis and treatment. He must learn to do more than teach reading.

The reading therapist at the college level needs to develop a high degree of flexibility in the selection of teaching methods and techniques. Increasing enrollments make large classes a necessity. Consequently, instruction must adjust to this stern reality. The therapist can learn to stimulate, inform, and guide his students so that the learner can accomplish his own purpose. His instruction can be individualized even in a group of forty or more students if each student has an opportunity to learn what he wants to learn in order to achieve his objectives. The therapist must make his instruction student-oriented and not one based upon an aged syllabus and an outworn course of study. He should make effective use of a flexible grouping plan to individualize instruction. His students can be grouped temporarily in order to achieve specific objectives and to meet more adequately the reading needs of his class. This plan requires experience and an understanding of the student's problems, needs, and interests. It should not be attempted by the inexperienced teacher. The therapist can make use of class demonstrations of specific reading skills in order to aid in the individualization of instruction. For example, he can learn how students at different reading levels, and each with a different text, can be taught how to identify main ideas in a chapter, how to read for a purpose, and how to make ideas one's own. The therapist should acquire experience in the use of informal inventories (1) designed to identify the reading needs of the student and the physical, psychological, and environmental factors which may affect the development of the student's ability to make effective use of his books. He should learn that information resulting from this inventory should be interpreted in terms of the student's academic history, his observations of the student, along with data resulting from tests of his own choosing.

To be effective, the reading program must not be operated in isolation from the mainstream of campus life. Faculty members must be aware of the program and of the contributions they can make. They must also realize that the reading therapist cannot do the job alone and that the participation of all members of the faculty is desirable. Consequently, the reading therapist must develop skill in "selling" the reading program to faculty members and in securing their cooperation in helping students improve those reading skills essential to the subject being taught.

To prepare teachers and therapists for this undertaking, the following recommendations are made.

- Identify and select students in the junior year having a desire and potential for careers as reading specialists, at the college-adult level.
- Encourage these individuals to acquire at the undergraduate level a background in psychology, sociology, and education which is relevant to their interests and needs. At this time the therapist in training should also have an opportunity to become acquainted with the aims, materials, and procedures generally utilized in the teaching of reading.
- Expand preparation at the graduate level so as to insure a broad

experiential background in the clinical study of the disabled reader and provide a rigorous approach to the acts of diagnosis. This can be accomplished by observation and participation in a reading clinic.

- Acquaint students with the many approaches, materials, and methods which can be used in college-adult reading courses. Help them to form judgments concerning their relative merits.
- Familiarize students with the history of the college-adult reading movement so that they will not repeat inadequate forms of instruction employed by earlier workers in the field.
- Provide students with a philosophy, background, and interne experiences in individual and group counseling.
- Stress the importance of establishing and maintaining rapport not only with the class but with each individual as well.
- Show the therapist how to help his students build up mental content by well conducted discussions, by the use of materials designed for easier reading, and by the "buddy" system of studying.
- Develop ability on the part of the therapist to interpret behavior rather than merely to evaluate it. Stress the value of focusing attention upon the interests and needs of the individual.
- Provide internship with master teacher of college-adult reading for at least one semester.

SUMMARY

Changes in the social and educational world necessitate the preparation of reading therapists who are able to meet both the instructional and emotional needs of their students. The reading therapist must stimulate, inform, and guide the student as the student achieves his objectives. If the therapist is to realize this goal, he needs not only a sound academic background but a degree of flexibility which will permit him to understand the student in his world of conflict and change. The therapist must learn to do more than teach reading.

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Study Skills for the Severely Retarded College Reader

H. D. Cartwright
University of Kentucky

The inability of many college students to read assigned material has finally become recognized in colleges and universities across the country. The higher level skills cannot be achieved as long as the students have not learned the rudiments of meaningful reading. For the past few years, therefore, educators have been paying an increasing amount of attention to the problem of corrective reading at the college level.

In September, 1967, the Reading and Study Skills Laboratory became a reality at Kentucky State College, Frankfort, Kentucky, a predominantly black institution. At that institution, the Dean of Instruction had searched for ten years to find some way to implement a program to improve the entering freshman's chances of remaining at college after he was admitted.

The University of Kentucky, Lexington, Kentucky, under the auspices of the Kentucky Research Foundation, was responsible for providing the personnel to establish a reading program for the student that we might term as an academic "high risk".

The main goals of the program are these:

1. To bring the student up to his fullest reading capacity in as short a time as possible.
2. To do the job thoroughly enough so that effective reading habits will become established and so that they will either consciously or unconsciously use the skills they will be exposed to.
3. To introduce the student to a systematic method of attacking the printed page so that the level of academic proficiency needed for college level work can be more easily attained.

To attempt to achieve these goals, the underlying philosophy used in the Reading and Study Skills Laboratory, is as follows:

1. Learning to read well is an acquired skill. There must be sufficient motivation to achieve this.
2. Improvement in reading is related to general proficiency in all aspects of the use of language. Reading, writing, spelling, speaking, listening, vocabulary improvement, and the study skills are all highly related and, therefore, must be taught in an interrelated manner.

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3. Growth in reading occurs more quickly when the reader understands theoretical principles and learns to use them in meaningful context.
4. Thinking logically is an integral part of effective reading.
5. 1:1 Relationship—The Human Aspect. This probably is the most important part of our program.

Since this paper is to deal with the aspects of study skills for the severely retarded reader, an attempt will be made to minimize the overall aspects of the project and concentrate on this entity.

The SQ4R (Survey, Question, Read, Recite, "Rite" and Review) system is the basic method by which the instructional program is patterned. Since this is a very reliable approach to academic maturity, what makes this method unique with our students?

First let's look at the students. Approximately one-third of the freshmen class are required to take the reading laboratory. These students scored 9.5 grade level equivalency or below on the *Nelson-Denny Reading Test.* The range on the *Lorge-Thorndike Non-Verbal Intelligence Test* is from 58-116. These students scored at least twelve points on the *American College Test.* They failed on the reading section of the English department's entrance test (a teacher-made instrument). All the students have decided disadvantages in an academic world because of their nonstandard dialects. But they are highly motivated toward achieving a higher education.

Keeping these aspects in mind and relying on past experiences, a multi-sensory approach is implemented.

The student first uses *Learning to Learn,* Section II, Smith, *et al.*, with each of the eight lessons in the section being supplemented by an instructor using examples to stress each point and discussing the various points individually and in small groups.

At his own pace, the student writes the answers to the material in the text and checks it in the prescribed manner. Each incorrect answer is student-corrected, and the correction is discussed with an instructor for further clarification.

When the entire class (5-18 students per class) has completed the material in Smith, a short essay examination is given over the material. The tests are graded on a positive point system. A minus or negative mark is never put on any paper. Notations are made on each student's paper and returned for class, small group discussions, or private conferences.

The students are then told they are going to demonstrate their ability to apply this system to their own text books. They must decide which text they are going to use and bring that book to the reading laboratory each time they come.

They are further informed that the next series of lessons will be by taped instruction. Nancy B. Davis' *Techniques of Study Tapes* are used in a class approach. Again further explanation of each section and re-emphasis is supplied by an instructor. When the exercise is completed in the student's manual, the instructor immediately points out how the same type of step to systematic learning was accomplished in the Smith text. Since the Davis tapes require work in a textbook, the student uses an assignment that has been given by one of his other instructors as practice work in the reading laboratory. When the practice work is completed, the reading instructor again goes over each student's work with the student and his text book.

Difficult? Yes. Time consuming? Yes. Worthwhile? Hopefully, yes.

The multi-sensory approach in conjunction with the highly individualistic involvement has resulted in better class attendance and fewer students' making failing grades at mid-term examination time.

Questions that have been formulated over this approach to the study skills are many and varied:

Is the reading laboratory becoming a glorified study-hall or a tutorial service? These aspects are carefully watched. Perfection of the techniques of study is what we are striving for, not mastery of a given text or course. When a student can take a chapter or section of a chapter and approach it in any modification of his own creation, or when the student can successfully use the entire SQ4R approach to the printed page, in the prescribed manner, we have made progress. Most of our students have never been given any help in achieving academic success. From our sources of information, the vast majority of the students have not had reading courses in their high schools. In fact, at the present time, I can think of only two students in the entire eight sections of the reading lab that have had this type of opportunity in the past, and they were of the speed-reading, group-oriented types of programs.

When the students ask if they may study during their time in the reading lab, the answer is always positive if they are going to use the systematic method that we stress. If they are not going to use the techniques that we stress, then the answer is a negative one.

Is the reading laboratory becoming too group-oriented with not enough emphasis on the individual differences? We try never to lose sight of the individual and the individual's needs. Each class session is so geared that when the student comes in he picks up his folder and goes to one of the carrels. There is always a note from his instructor or from the director of the program pertaining to the work that is in his folder. Each student has a check list of the work expected from him to bring him closer to the degree of academic performance that he is capable of producing.

Although I agree with the growing concern of evaluating a highly individualized approach to the reading and study skills improvement program by way of standardized tests, I feel such tests should be used with caution along with other types of measurements. They do make excellent records and are very impressive for deans and other administrative personnel. As long as we are funded in a unique manner we will have to continue this type of evaluation.

Our students in the reading laboratory are not the typical college students. They are the ones that are going to be gone at the semester break if help is not provided for them. True, we will still lose some, but we won't lose all. Perhaps the ones that remain are going to gain enough strength so that they will not be held back in their search for positions that are available only to those with a college degree.

The study skills section of the reading program is extremely important, but do keep in mind that vocabulary improvement, comprehension techniques, skimming, scanning, spelling, writing, associational reading, as well as the ability to cover vast amounts of material as rapidly as is necessary, are also areas that need time in the reading laboratory.

The facilities of the Reading and Study Skills Laboratory are available thirty hours per week, to anyone on the entire campus at Kentucky State College, with no fees involved.

However, the study skills sessions here-in described are for the entering student that comes to the reading laboratory by way of the testing procedure during freshman orientation.

By consistent and critical self-evaluation of the program and by the acquisition of professional advice from leading university reading programs, such as Indiana, Purdue, Rutgers, and Minnesota, the project has maintained its highly individualistic nature with our specific type of students' needs uppermost in our minds for the implementation of a successful program.

It is all worth it when students who have been failing come by and with glowing faces say—"Hey! I passed."

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Publishing Company	**Materials**	**Author**
American Book Co.	Webster's New Students Dictionary and Webster's New Students Dictionary, Teachers Annotated Edition	
Appleton-Century-Crofts	*_Programmed Vocabulary_ _Toward Better Reading_	James I. Brown Cosper and Griffin
ARC Books	_2300 Steps to Word Power_, Manual	Gruber
Book of the Month Club	Portfolio #4, "How to Enlarge Your Vocabulary" (a part of _Reading Skills Program_) Manual	
Bureau of Publications Teachers College—Columbia University	Manual for (A-E)	
	Standard Test Lessons in Reading, Book D and E	McCall Crabbs
	Answer Key for each of above	
	Study Type of Reading Exercises: College Level, Manual	Strang
	Study Type of Reading Exercises: Secondary Level, Manual	Strang
California Test Bureau	_Lessons for Self-Instruction in Basic Skills_, Book 4, Manual	
	Lessons for Self-Instruction in Basic Skills, Book 5, Manual	
	Lessons for Self-Instruction in Basic Skills, Book 6, Manual	
	Lessons for Self-Instruction in Basic Skills, Book 7, Manual	
	Lessons for Self-Instruction in Basic Skills, Book 8, Manual	
	Lessons for Self-Instruction in Basic Skills, Book 9, Manual	
California Test Bureau	_Junior Assortment_ (Reading Comprehension) _Lessons for Self-Instruction in Basic Skills and_ *_Advanced Assortment_ (Reading Comprehension) _Lessons for Self-Instruction in Basic Skills_	
Cambridge Univ. Press	*_Reading Faster: A Drill Book_ Manual	Fry

Publishing Company	**Materials**	**Author**
Coronet	*Coronet Learning Programs* Manual and *How to Improve Your Reading,* Manual	
Educational Development Laboratories, Inc.	**EDL Word Clues Series:* Book G, H, I, J, K, L and M *EDL Skimming and Scanning Text* (1-524) *EDL Skimming and Scanning Workbook* (-525), Manuals Filmstrips—Controlled Reader and Students Manuals	
C. S. Hammond and Company	**Words are Important,* Manual Simplified Introductory through Book #5 Advanced	Hardwick
Harcourt, Brace and World	*Learning to Learn*	Donald E. P. Smith
	Word Attack and Manual	Roberts, et al.
D. C. Heath	*Efficient Reading*	Brown
Holt, Rinehart & Winston Inc.	*Let's Read Series* Book 1, 2, 3, 4 Manual	George Murphy
	Word Wealth, Manual	Miller
	Increasing Reading Efficiency, Manual	Miller
	Word Wealth, Junior Manual	Miller
Houghton Mifflin Co.	*Improvement of College Reading*	Glock
Houghton Mifflin Co.	*A College Developmental Reading Manual*	Wilking and Webster
McGraw-Hill Book Co.	*Vocabulary Improvement Constructed Response Programmed Reading,* Manuals	Nancy Davis
G. C. Merriam Co.	*Webster's Seventh New Collegiate Dictionary*	
Prentice-Hall	*Be A Better Reader* Book 1 2, 3, 4, 5, and 6 Manuals	Nila B. Smith
	Power and Speed in Reading	Gilbert
G. P. Putnam Co.	*College Reader*	Wedeen
Reader's Digest Services, Inc., Educ. Division	*Advanced Reading Skill Builders* Level 7, Book 1 Level 7, Book 2, Level 8 Book 1 and 2 Manuals for *Advanced Reading Skill Builders Adult Education Readers* Level A and B. Manuals *Improving Your Reading* Part 1 and 2 Manuals	
Science Research Assoc	*Programmed Course in Vocabulary Development,*	
	Reading Laboratory IIIb	Box
	Reading for Understanding	Boxed
	Developnig Your Vocabulary, Manual	Boxed

	How to Improve Your Reading	Whitty
	Progress Folders for *How to Improve Your Reading*	
	Better Reading Book 1 and 2	Simpson
	Better Reading Book 3, Manual	
	College Reading #1	Boxed
	College Reading #2	Boxed
Scott-Foresman & Co.	*Tactics in Reading*, Box 1	
Self Instructional Reading Service	*Techniques of Listening*	
	Techniques of Listening Tape	
	Techniques of Reading T.M.	
	Techniques of Reading	
	Students	
	Manuals	
	Techniques of Reading	
	Tapes 1-12	
	Techniques of Study T.M.	
	Techniques of Study Student	
	Techniques of Study Manuals	
	Techniques of Study Tapes 1-12	Davis, N. B.
Visual Education Assoc., Incorporation	*English Vocabulary Cards*	

Publishing Company	**Test**	**Form**
California Test Bureau	*California Advanced Reading Test*	*X*
	California Advanced Reading Test	*Y*
	California Advanced Reading Test	*Z*
	Scoreze answer sheets #570	
	Student Profile sheets	
	Examiner's Manual	
	Technical Report	
Houghton Mifflin Co.	*Lorge-Thorndike Intelligence Test*, Level 5, Reusable	
	Nonverbal battery	
	IBM answer sheets for the above test	
	IBM scoring stencils for the above	
	Manuals for the above test	
	Technical manuals	
Nelson-Denny	*Reading Test for High Schools A and B and Colleges*	A and B
	IBM answer sheets	
	Self-score answer sheets	
	Technical manuals	
Psychological Corp	*Brown-Holtzman Survey of Study Habits and Attitudes*	C
Harcourt Brace & World	*Brown-Carlson Listening Test*	

Source	**Equipment**
A. B. Dick Products of Lexington, Inc.	A. B. Dick Model 201 Thermal Master Transparency Maker A. B. Dick Model 215 Electric Spirit Duplicator A. B. Dick 503 equipment cabinet
Educational Development Laboratories, Inc.	Flash-X Spelling Disc (x-14, x-15, x-16, x-17, x-18, and x-19) Flash-X Numbers Discs (x-13) Instructional guide Controlled Reader, Jr.
G. C. Merriam Company	*Webster's Third International Dictionary* Dictionary Stand (floor type) for *Webster's Third International Dictionary*
Barney Miller's, Inc. —source—	Wollensak Tape Recorder Earphones Gray case Melody Tape—1800 ft.
Audio-Visual Research	Rateometer Instructional Guide
Charles Beseler Company	Overhead Projector
Bell & Howell	Language Master and Earphones and Cards
Science Research Associates	Pacers
Viking	Listening Stations

A Pre-College Summer Reading/Study Skills Lab

Frank L. Christ
Loyola University – Marymount College of Los Angeles

If educators can find no reason to doubt statistics quoted by Orchard (8) in his recent article on college attrition and the Berea, Ohio, experimental program of Dr. Pitcher that 381,000 students were fail-outs (students who have been dismissed from a college or university because of poor grades) in 1967 and that this number would reach one million fail-outs annually by 1980, then they must renew their efforts to find more and better ways to minimize this tragic waste.

A few special programs, such as Dr. Pitcher's Educational Development Center, are part of an attempt to help fail-outs develop sufficient confidence and skills so that they can return to college and succeed academically. And certainly many students who would have become fail-outs are identified and helped each term by present college or university reading/study skills programs. High school "college readiness" programs, although proportionately few in numbers, contribute also to reducing the college fail-outs statistics. A fourth type of program is the summer pre-college reading/study skills courses offered by colleges or universities.

A survey of two major reading conferences, the *Journal of Reading* and the *National Conference Proceedings*, indicate a paucity of reports on these summer pre-college reading/study skills programs. Only McConihe (5, 6) of Western Reserve University, Tremonti (9) of University of Dallas, Maxwell (7) of University of Maryland and Carroll (2) of Southern Methodist University, describe programs that attempt to bridge the reading/study transition from high school to college. Yet there are many more such programs offered—programs that are preparing high school students for college reading/study skills tasks and that are reducing freshmen fail-outs.

The program described in this paper is such a pre-college readiness program that has been developed and directed by the author for the past eight years. Originally begun in rural Western Pennsylvania as a privately-operated summer pre-college clinic, the program has been offered for the past five years as a service of the Study Skills Center of Loyola University of Los Angeles. When Marymount College affiliated with Loyola University and was awarded a USOE Title III Grant in 1968, the program was expanded to service students on both the main Loyola/Marymount campus and at the Marymount two-year college situated in a separate campus facility.

DESCRIPTION OF PROGRAM

Rationale and Assumptions—Because the systems rationale with its emphasis on what Banathy (1) defines as "an instructional systems approach" is the cogent force behind the design and evolution of the author's summer pre-college reading/study skills programs, a review of certain assumptions made by the author (4) in a previous National Reading Conference paper will help the reader to understand the evolutionary nature of the programs.

These assumptions affirm that

...learning begins where the student is
...learning how-to-learn can be learned
...learning must be meaningful and goal-oriented
...learning is a process
...learning is not always easy nor is it always fun
...learning can be personal regardless of numbers of students
...each student is unique
...each student is a fellow human being
...students can and do learn by themselves
...students do learn from each other
...students learn at different rates
...students learn in different ways
...diagnosis, referral, and follow-up are synonymous with counseling
...computerization need not be dehumanizing
...individual learning can be economical

Each succeeding year's program has been shaped by these assumptions and reshaped by four other factors:

1) the latest research findings in psychology of learning;
2) newly published materials in reading/study skills;
3) changes in educational technology, particularly in computer managed learning or counseling; and
4) feedback from students and counselors evaluating practicality, efficacy, and interest of program components.

At present, two pre-college reading/study skills labs are offered each summer at both campuses. All labs are held in August after the regular summer session and end just two weeks before the beginning of the fall term. The labs are deliberately scheduled for this period to minimize the loss of skill and attitude that seems to occur when such programs are offered during regular summer sessions. Labs are held three hours a day, five days a week, for four consecutive weeks. Registration for each lab is limited to twenty-five students.

Each lab is directed by a reading/study skills specialist assisted by two to four student counselors. These students, generally upperclassmen are part of the University work-study program and have been trained as peer reading/study skills counselors.

The labs are described in the promotional brochures as . . .

> intensive and individualized programs of instruction and practice in fundamental skills necessary for success in college work with particular emphasis on three major courses related skills: textbook study-reading, responsive listening-notemaking, and examination techniques.

Orientation to Labs—At the first session, a slide-lecture on the systems approach with an overview of lab materials and activities initiates the students into the program. This includes an explanation of the *Survey of Reading/Study Efficiency* (Chicago: Science, Research Associates, Inc. 1968), the basic diagnostic tool of the lab program: and of the *Individualized Computer Printouts* and of the *Personal Program Guide*, two feed-back devices that provide both individual diagnosis and action-type recommendations for each student.

The following five learning options available to each student are explained:

1. *To Read*—sections of chapters of how-to-study manuals to help a student understand a skill area
2. *To Do*—exercises and activities to develop and maintain efficient and effective reading/study habits
3. *To View*—sound films, slides, or film strips for understanding of a skill
4. *To Confer*—with directors, student counselors, or guidance personnel in problem areas
5. *To Test*—using standardized tests and inventories to check achievement or progress in reading/study skills

Following this explanation, students are introduced to a specially prepared notebook, *SR/SE Systems Student Response Log,* in which each student records his reaction to recommended readings and viewings, describes his approach to study, analyzes his study environment, summarizes counselor conferences, and reports his progress or lack of it as he works his way through his *Personal Program Guide*. Students then explore lab materials and equipment with the director and student counselors at hand to answer their questions.

Next, the *Survey of Reading/Study Efficiency* is administered to students after which students separate into groups to discuss the lab orientation with a student counselor. The first session closes with each student filling out two forms: 1) personal statement of his individual expectations with questions or comments on the program as he has so far experienced it: and 2) a biographical statement. Both of these forms help the learner, the counselors and the program director to develop co-operatively a personal improvement program.

Diagnosis. In the twenty-four period between the first and second session, the Surveys are processed by an IBM 1130 Computer so that each students' responses to the 144-item survey are tabulated and recorded on an IBM print-out. This personal print-out, different for each student, spells out only a student's major problems as he has responded to questions or statements in five major reading/study areas:

1. Study Management, which includes time management (scheduling personal aspects and task organization) and study environment.
2. Major Course-Related Skills, which include study reading marking and underlining, listening and note making, and examination techniques.
3. Auxiliary Course Skills such as library research, vocabulary building and spelling, and the writing skills of grammar and mechanics.
4. Attitudes, Interests, and Habits, including reading habits and interests, concentration and memory.
5. Physiological Aspects of Learning which focus upon the student's general health and vision, particularly those involved in reading.

A second print-out of each student's responses for both major and minor reading/study problems is processed by the computer for the lab director's file. A third and final print-out develops a group profile from a frequency count of problem responses. This data is used by the director to custom design a program for each group of students according to their needs.

When the students return on the second day of the program, each student plots his individual reading/study efficiency profile and then responds or reacts to his print-out by writing in his *Student Response Log.* Group discussions led by student counselors help students see their problems are not unique. Later, each student reviews his profile and computer print-out with his counselor. He then completes his *Personal Program Guide* which becomes his individual syllabus for the reading/study efficiency program. In it he has checked specific activities that he will perform in the lab program. The director reviews the group profile with the students and outlines his recommendations for program activities.

Lab Activities—Depending upon the group profile and each students' *Personal Program Guide,* students work at reading/study efficiency tasks either individually, as coach-and-pupil teams, in small groups, or as one large group.

Typical group activities include lecture-discussions on learning, study-reading, and high-school college adjustment, as well as introductory activity sessions in critical reading, listening-notemaking, SQ3R, outlining, and underlining techniques, rate building, and program instruction.

Students can choose from over 140 individual activities listed in the SR/SE *Personal Program Guide.* These activities include vocabulary development with records, grammar review in programmed instruction texts, spelling remediation through cassettes, rate building with an accelerator, reading excerps from how-to-study manuals, viewing film strips on library usage or films on reading techniques, and taking diagnostic or achievement tests in various reading/study skills.

Each day a group feedback session begins and concludes lab activities. During these sessions, students, counselors, and director attempt a dialogue to clarify, amplify, and reinforce previous learning.

Through response sheets in the *Student Response Log* which each student fills out during or immediately after every lab activity, a "silent dialogue" is carried on between student and counselor. As a counselor reads the students' responses, he responds by talking back in writing to the student. This "silent dialogue" becomes a record of student-counselor interaction.

Lab Materials. A list of materials—equipment, kits, tapes, records, cassettes, films and film strips—can be found in the *Manual for Instructors and Counselors* and in the *Personal Program Guide,* two components of *Survey of Reading/Study Efficiency* (3) that was mentioned earlier.

The number of options available to students in the lab programs is considerable. In the *Personal Program Guide* alone, students are directed to fifty-five different sets of materials that are the products of thirty publishers. Incidentally, since the publication of the *Guide* one year ago, substitutions and additions have been made to the original list of materials.

Program Cost—Capital outlay for materials and lab equipment is estimated below:
1) Basic lab materials as listed in *Personal Program Guide*—$500.00; 2) Audio equipment, including twenty tape players and five recorder-players—$650.00; 3) Diagnostic materials as listed in *Personal Program Guide*—$100.00; and 4) Films and film-strips—$250.00.

Operating cost per student for diagnostic materials, computer time, and personal workbook are listed below:
1) Surveys and tests—$1.00; 2) Computer charges for twenty-five students—$10.00; and 3) Individual Lab materials—$3.00 to $10.00 (depending on each student's needs). It should be noted that students pay an $80.00 fee for the lab program which at one lab facility can service fifty students: twenty-five in the morning program; twenty-five in an afternoon or evening program.

SUMMARY

Summer pre-college reading/study skills programs sponsored and directed by the colleges can help students bridge the gap between high school and college. They can also reduce the fail-out statistics by developing students who not only know how to learn but who have been exposed to an intensive and rigorous training in basic learning techniques.

SUMMER PRE-COLLEGE R/SS LAB MATERIALS

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A Comparison of Four Practice Schedules in College Developmental Reading Classes

Robert L. Curry
University of Oklahoma

and

Bette H. Roberts
Central State College

INTRODUCTION

If one pauses to reflect on the modern American scene, he can scarcely fail to be aware of the "need to read" which exists today. We have seen the paradox of technological and scientific achievements which have at once simplified and complicated the lives of modern Americans. Technology has created a greater demand than ever before for high-level skills, the acquisition of which requires proficiency in the skills of reading. At the same time, advanced technology has made it possible for larger numbers of people to work fewer hours and to retire at earlier ages. As a result, there is more leisure time in which to read as a form of recreation and as a means of self-improvement.

In addition to the influence of technology on the reading needs of our people, a pyramiding population growth[1] has further piqued interest in reading improvement. Problems of human survival, health, social justice, conservation of natural resources, transportation and communication, international peace, and cultural enrichment are all intensified as the population grows.

Other developments have highlighted the "need to read." Great changes in social and economic mobility have opened up new opportunities for education and employment to previously disadvantaged groups in our society. Again, reading skills loom large as a prerequisite for taking advantage of these new opportunities. Business and professional people, impelled by the need to "keep up" with the growing body of knowledge in their respective fields, also are seeking more efficient reading and study skills.

The hue and cry about the "explosion of knowledge" and its corollary, the "explosion of publications" together with the recognized need for "more effective communication" have not fallen on deaf ears. College enrollments all across the country are bulging. Young people are responding to the call for higher education as a prerequisite for more productive living and adults are returning to complete or to upgrade their education. Unfortunately, it has been observed that many students are entering college with inadequate reading skills for coping with the demands of higher education. Therefore, along with increased enrollments the past two decades have witnessed an astounding growth of various types of college and university reading programs.

One of the most urgent problems facing teachers is that of structuring the learning environment so as to achieve the learning objectives most effectively and efficiently. The basic assumption implied in the term "developmental reading"—a term frequently applied to college reading programs—is that reading is a skill which is subject to improvement through practice. Virtually every set of materials designed for courses in reading improvement emphasizes the importance of practice. Patty and Ruhl[2] believe that a program in developmental reading should be based on the concept of spaced, systematic training and practice. There is much in the literature of learning research to suggest that practice influences the amount and quality of learning. Questions concerning the conditions of practice, such as the role of frequency in learning and retention, spacing versus massing of practice sessions, and the optimum length of practice sessions have also been investigated and reported. There are, however, few relevant studies to guide the college reading teacher in planning for systematic practice within the framework of the limitations imposed by student variability and instructional time available. Most educational psychologists have relied on studies dealing with rote learning tasks to verify the effectiveness of practice on meaningful learning. Furthermore, though it may be conceded that these learning studies have implications for the scheduling of practice sessions in college reading programs, there has been nothing reported which gives adequate guidance in determining whether a particular schedule of practice might be more effective than another.

At the University of Oklahoma during the 1967-68 academic year a pilot study was conducted to determine whether added practice sessions, varied according to the amount of practice, frequency of practice, and intervals of practice, resulted in significantly greater gains in reading proficiency for one of four groups.[3] Schedules were selected which would be practical to include in the requirements for a college reading improvement course. No effort was made in this study to separate the influence of the effect of amount, frequency, and intervals of practice. The course was organized so that each class had two one-hour periods of group instruction per week. This experiment called for Group A (N = 9) to receive one and one-half hours of group instruction and the remaining thirty minutes be spent in individual practice on a pacing machine. Group B (N = 8) engaged in two one-hour periods of individual practice on the pacing machine per week in addition to the two hours of group instruction. Group C (N = 9) practiced on the individual pacing machines for five twenty-minute periods per week in addition to the two hours of group instruction. Group D (N = 14) received two hours of group instruction and a suggestion that they practice individually on the pacing machines at least two hours per week. No effort was made to determine whether any members of Group D engaged in the suggested practice sessions. The *Iowa Silent Reading Test* was administered at the beginning and conclusion of the course and the gain scores of the groups were compared for significant differences.

Several tentative conclusions were drawn from this pilot study. Among the four teaching methods examined, the methodology for Group D (suggested practice of at least two hours per week with no follow-up to determine whether or not the practice was carried out) was the least effective. Among these four teaching methods, the method employed for Group B (two one-hour practice sessions in addition to class attendance) was more effective than the methods employed for Groups C and D. Groups A and B received approximately the same degree of benefit from the methods employed. The data suggested the possibility that many short practice periods as used by Group C do not appear as effective as a few longer ones. The data also suggested that different reading skills may be improved by different practice methods.

In the academic year 1968-69 this pilot study was replicated in a more controlled fashion using a different course structure with broader instructional goals and more subjects.

STATEMENT OF PROBLEM

This investigation was conducted to determine whether differing schedules of practice have a significant effect on the reading achievement of male college students enrolled in a course in developmental reading. Four dependent variables were selected to reflect performance: vocabulary, comprehension, reading rate, and spelling.

DESIGN

The subjects of this study were 80 male students enrolled in a college developmental reading course at Central State College, Edmond, Oklahoma. The learning tasks involved the acquisition and improvement of reading and spelling skills. Pre-tests were administered to provide for experimental control of the equivalency of treatment groups. These tests were the *Nelson-Denny Reading Test*, which measures vocabulary, comprehension and reading rate, and the *Metropolitan Achievement Test* (sub-test spelling). The course format required each student to engage in independent, self-help activities under the guidance of the course instructor. The subjects were randomly assigned to one of four treatment groups which resulted in 20 students in each group. The four treatment effects investigated by analysis of covariance were:

Group I—five practice sessions per week. Each session was twenty minutes in length.

Group II—two practice sessions per week. Each session was fifty minutes in length.

Group III—three practice sessions per week. Two of the sessions were thirty-five minutes long and one was thirty minutes long.

Group IV—no required practice.

Practice consisted of supervised continuation and extension of activities which the subjects pursued during their regular class meetings of one hour every day for five days a week for eight weeks. Learning performance was measured by post-test scores on the four dependent variables: vocabulary, comprehension, reading rate, and spelling.

FINDINGS AND CONCLUSIONS

The results of *t* tests of significance between mean pre-test and mean post-test performance revealed that Groups I, II, and III—the groups which practiced—made significant gains, beyond the .05 level of significance, in the reading sub-skills of vocabulary, comprehension, and reading rate. Group IV, which did not practice, gained significantly only in the area of reading rate. These findings indicate that students who practice perform significantly better in vocabulary and comprehension skills than do students who do not practice. Reading rate was significantly improved by all students whether they practiced or not. A possible explanation of these findings follows.

Experience with the nature of the reading process and with college students who enroll in reading improvement courses indicates that the area most susceptible to change in the direction of gain is that of reading rate. This conclusion is based on the observation that students are often highly motivated to increase their reading speed. They demonstrate a strong tendency to equate reading speed with being a "good reader." Because of this predisposition toward speed in reading, and perhaps because of the nature of the sub-skills themselves, time and experience are required for students to achieve a balance between reading speed and the desired level of comprehension. In the beginning, untrained students often sacrifice gains in vocabulary and comprehension in order to achieve greater speed. With time and practice they come to associate reading speed with "rate of comprehension." They recognize that speed alone, without comprehension, merely causes them to misunderstand faster. Also, with time and practice, students learn to achieve a flexibility of reading rate to fit the nature of the material and the purpose for which they are reading.

In view of the results of the study and the nature of the process involved in reading improvement, it seems plausible to conclude that Group IV made a significant gain in reading rate at the expense of gains in other skill areas. This group, which was not required to practice, failed to make significant progress in vocabulary and comprehension because an eight-week course without the benefit of extra practice sessions to reinforce and extend learnings was insufficient for balanced gains to be achieved.

The *t* tests of significance between pre-test and post-test performance in vocabulary, comprehension, and reading rate lead to the following conclusions: (1) Significant improvement in vocabulary, comprehension, and reading rates is a function of practice, whereas a lack of significant gain is related to a lack of practice. (2) Significant gain in reading rate, when accompanied by a lack of significant gain in other reading skills, is a result of the activities engaged in during regular class sessions alone.

Groups I and II were found to have made small but significant gains (beyond the .01 level of significance) in spelling; Groups III and IV made no significant gains in spelling. These findings cannot be attributed to practice or lack of practice, for Group III did practice yet made no significant gain in spelling. Nor can the results be attributed to the treatment effects of distribution of practice, for an analysis of covariance revealed no significant difference among the groups. Therefore, it must be concluded that significant gains in spelling for Groups I and II and the lack of significant gains for Groups III and IV are attributable to some uncontrolled variable. Two possible explanations are offered which may point the way for further research.

The size of the gains made was extremely small. This fact suggests the possibility that spelling skills of adults are highly resistant to change. Another possibility, which is related to the first, is that in order for change in spelling ability to occur more time is needed for direct attack on spelling deficiencies than is available in an eight-week course in which spelling is only one of several instructional goals. These suggestions are offered as hypotheses for further testing.

The analysis of covariance revealed no significant difference among the four groups in any sub-skill except comprehension. Farther analysis showed Group IV to account for the significant difference among the groups with respect to comprehension. This significant difference (beyond the .01 level) was due to a loss; not a gain. Group IV's loss in comprehension may be related to its gain in reading rate, and both may be related to the combination of the brevity of the course and the lack of practice as previously postulated.

The null hypotheses of no significant difference in achievement in vocabulary, comprehension, reading rate, and spelling among the four different treatment groups were accepted. The evidence led to the conclusion that no particular schedule of practice—daily twenty-minute sessions, bi-weekly sessions of fifty minutes each, tri-weekly sessions totaling 100 minutes, or no scheduled practice—emerged as significantly superior to any other schedule in terms of superior achievement in reading and spelling. However, the *t* tests did clearly indicate that practice, distributed in any one of the three ways specified in this study, was superior to no practice at all.

RECOMMENDATIONS

The following recommendations are offered for classroom practice and further research:

1. That college reading improvement courses require that regular laboratory practice sessions be observed.

2. That more attention be given to the direct teaching of spelling skills.

3. That a study be made of student-directed, self-help learning experiences in spelling as compared with a method of direct teaching of spelling patterns.

4. That consideration be given to the experimental validation of instructional goals which are commensurate with the amount of time available for their attainment.

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The Role of the Skills Instructor In the College Reading Improvement Program

June B. Ewing
Georgia Southwestern College

Our democratic society states that all persons have a right to an education. This concept of equal opportunity for all, coupled with forcing students to attend school for a specified number of years, has made the high school diploma so common place that it has little prestige in these educationally oriented times. The "accepted American standard" now is the individual with at least some college training behind him. The right to an education, then, has moved on to the colleges and universities. The open door admissions policy results in not only more students in college today, but more students who are motivated only by someone else's desire for them to be there. This kind of motivation may get them onto the campus, but it is of little value beyond that point. An increasing number of college students lack the desire to learn, and in addition many are poor readers who lack the skills needed to mind-wrestle the college textbooks which are handed to them. Too often, they have never had to do anything that required any degree of mental strength and are exhausted before they can comprehend even one college-level assignment.

In Georgia, as in other areas of our country, not enough has been done to save these floundering students in the past. But with federal funds providing some motivation and with the increasing number of students who need help, colleges in Georgia are developing programs of special student services in the area of reading and study skills. Such a Center was developed last year at Georgia Southwestern College with support from Title III of the Higher Education Act of 1965.

One of the most crucial factors which had to be considered in the organization of the Reading-Study Skills Center was personnel. What will the Skills Instructor in the College Reading Improvement Program have to do? What are the necessary qualifications? What kind of training is available at the graduate level to prepare teachers for teaching these basic skills in a college improvement program? These are some of the questions to be considered in this discussion of the role of the reading skills instructor.

Perhaps the role can best be considered by relating experiences of the first year's organization and work at Georgia Southwestern. A brief description of the program follows. The Reading Center, which is now in its second year, offers a two-hour course entitled Improvement of Learning. The main objective of the course is to help the student develop certain needed skills so that he can experience some measure of success in his college work. As a separate department working directly under the Dean of the College, the Reading Center serves every department on campus. Any college student may voluntarily enroll in the program. Also, a student may be referred to the Center by a faculty member or counselor, or may be required to enroll because he shows extreme deficiency in reading skills.

The student is tested when he comes to the Center and is placed in materials at his level and appropriate to his needs. He works at his own speed and competes only with himself. Since a generous amount of money was earmarked for the first year's implementation of the program, an impressive selection of reading materials covering a wide range of subject areas at varying levels was made available immediately. The funds specified for equipment made possible the purchase of numerous kinds of the most recent technical instruments. This combination makes possible a great deal of flexibility in planning programs to suit the individual needs of students. An average of 150 students is served each quarter on a regular four-day per week basis. Early in the quarter individual conferences are held with each student at which time he has an opportunity to discuss strengths and weaknesses as revealed by his test scores and to determine the best program of study for his particular needs. Individual counseling is an integral part of the program, and is available to the student at any time through the Reading Center.

As with many special programs, immediate implementation was requested. Funding was in July, 1968, and the program was to be operative in September, 1968. There was much to be done in a short period of time. Specific aims and objectives had to be set forth and a course plan outlined. Materials and equipment had to be selected. Consideration had to be given for selection of students for the program and for analysis of students' needs. The most effective means of using the various materials and equipment had to be determined. Existing classroom and office space had to be redesigned for utilization as a Skills Center. Since no such student service had been available before this time, information about the new program had to be circulated. Both faculty and students needed to be aware of the services available. Procedures for evaluating student performance had to be established. Most of this needed to be done before the initial student-teacher confrontation. At this early stage in the development of the program, what roles for the reading skills instructor have already been indicated?

First of all, the reading skills instructor should have some knowledge of program development at the level he is teaching. This should include organization, financing, and administration of the program.

The skills instructor should have a sound philosophy of reading which is compatible with good learning theory.

The college skills instructor should have an up-to-date knowledge of materials and equipment available for the college student. This does not mean information based on what was available ten to fifteen years ago. Neither should it be based on prejudices handed down.

The skills instructor should be able to work effectively with other faculty and also relate well to the students.

The skills instructor should have a well grounded knowledge and understanding of psychological and educational tests to enable accurate diagnosis of difficulties, evaluation of student progress, and evaluation of the total program.

Now, what about the role of the skills instructor in the classroom teaching situation? To ascertain this, let us first take a look at the student. What kinds of students enroll in an improvement of learning course? Obviously thtere are many kinds in the program, ranging from the highly motivated and capable student to the student whose ability, interest, and/or attitude leaves much to be desired. Results of several different test measures administered to 165 students enrolled in the Center, Fall Quarter, 1968, indicate that the majority of the students fall into this latter category. Mean raw scores for comprehension on the Davis Reading Test and the Nelson-Denny Reading Test corresponded to national percentile ranks of 21 and 19. Scores on the Allport-Vernon-Lindzey Study of Values, and the Bernreuter Personality Inventory indicated low ego strength. Scores on the Inventory of Satisfaction with College were significantly lower for students enrolled in the reading program than for a sample of students not enrolled in the program (P less than .05, $T = 2.03$, df $= 53$).

At this point, it becomes evident that the skills instructor must be able to interpret test data and to weigh the value of such test results by comparing it with information gained in individual conferences with students and by students' self-evaluations.

Another look at the total group of students in the reading program the first year shows that more than half the students were boys. Slightly more than half the students were required to enroll in the program because of academic difficulty or special departmental requirements. Two-thirds of the required students were boys, hence a higher percentage of girls elected to take the course.

When asked to express what they would like to gain from a reading improvement course, an overwhelming majority of students wanted (1) to be able to read faster and (2) to understand more of what they read. Most students enrolled in the program read everything at the same slow pace, and they are the first to recognize this. What they do not always recognize is the importance of flexibility in reading speed. The reading skills instructor, then, can help them to develop a flexibility based on purpose for reading and difficulty level of materials. Spache and Berg (2, p. 185) list the planning of purpose as "an essential first step in attempting to read almost any kind of reading material." They also state that "the reader retains only what he thinks is expected of him, and when he is not clear in this expectation, he retains almost nothing of real value." By using materials which are of interest to the student and by letting the student share in the outline of his needs, the individual program of improvement becomes very real to the student. There is a relevancy to his particular needs which acts as a special motivation. Although this development of a desire to improve and interest in self-improvement is important in itself, it has additional value as an aid to retention of material read.

With many of the students in the program who were required to be there because of academic failure, one of the first obstacles to overcome was that of attitude. These were students who had experienced failure and some of them repeated failure, and the result was a low concept of self. Some resented being required to enroll in an improvement of learning course, even though they wanted to remain in college. Their desire for an "education" went back to the social pressures or perhaps to the draft situation.

Can such an unfavorable attitude be changed or improved? Counseling with students can help. The skills instructor can serve as counselor to listen to the student. On our campus, the clinical psychologist and academic counselors help when needed, but the reading skills instructor has the opportunity of frequent personal contact with the student. During the first 3 quarters, an estimated 474 hours were spent in individual counseling. This was in addition to the regular classroom contact.

One of the greatest values found in the use of reading equipment was with this type of student. The same boy, who has little interest in picking up a book to read, often will become very much interested in using the equipment. He thinks he reads much better with this technological help. He thinks he understands more when he has this kind of help. And for the student who has a poor self-concept, to think you do something better is a big accomplishment.

The skills instructor must know the advantages and disadvantages of the equipment being used. He must know how it can be used effectively and when. He must provide opportunities for transfer of reading skills to traditional printed materials. Some of the programmed and packaged materials published very recently are helpful in this transfer. College textbooks and free reading books can also be used effectively.

The skills instructor should establish a classroom atmosphere which is different from that of many of the traditional college classes. It need not be an atmosphere of authoritarianism nor one of grim and unimaginative drills for skills. It should provide for student-teacher interaction and for students to react to opinions of the other students.

The Board of Regents of the University System of Georgia has set as a goal the financing of special developmental programs in each of the units of the University System. The need for special help has been felt and expressed. Action is being taken to implement programs. But what kind of training is available to prepare teachers for teaching these basic skills in a College Reading Improvement Program? In Georgia colleges, there is no training specifically geared to this need. In many other states there is no training geared specifically to this need. We have seen and are seeing the role of the reading skills instructor change as a result of technological advances in materials and equipment, and through increased interest in teaching reading and study skills at the college level. Mary Austin (1, p. 444) states that in re-evaluating the professional training of reading personnel, colleges should be willing "to recognize certain inadequacies of the status quo." Although Austin is not referring to reading instructors at the college level, the need remains the same. This does not mean a complete change in the curriculum for training teachers of reading. In most instances, it simply means the addition of one or more courses or the restructuring of certain existing courses to prepare the teacher better for the role of college reading skills instructor.

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Materials Evolved From Teaching Delinquents

Marshall D. Gordon
Centennial School District, Warminster, Pa.

Teaching The Delinquent Reading in a Residential Situation. The Institute for Learning under the leadership of Dr. Jules C. Abrams initiated a unique program in 1964. At that time, a team of staff members was sent to a youth delinquent center in Philadelphia to establish a comprehensive reading program.

The Delinquent. Of the many factors the students of the institution had in common, an important similarity was their reason for being there. Practically all the boys were being detained for truancy, burglary, robbery, receiving stolen goods, and conspiracy. They differed in their additional charges such as rape, murder, assault and battery. Almost all were gang members, immature, and economically deprived. In most cases, they were either from broken homes or were bastards. Parental love and example seemed foreign to the majority. All of the boys resided in the institution.

Pedagogy. The methods of instruction included the use of an initial reading machine for letter presentations and tracing, cartooned materials, experience projects concerning aquariums and tropical fish, famous artists, projections from semi-realistic paintings, and the use of high interest low readability commercially purchased materials. (1) A model car activity involved building model cars dating from the early 1900's to the future, reading and following directions, studying the history of the car, recognizing its parts, writing an experience story about the project, and organizing and presenting the work to other boys in the institution. (3)

The older students, 14 to 16, participated in series of debates. The two most successful debates were on punishment versus help for the boys in the institution and for and against gang membership. Newspaper articles and television often served as resource material. Each boy interested in a debate topic researched his arguments and presented his ideas in writing to his teacher. Three to five boys were selected to serve on each side. Before the debate each side met as a group and prepared a written statement of their key arguments. This statement was rewritten on the blackboard for reference purposes during the debate.

After the debate and class discussion, the points that the class felt to be most significant were organized into a memo. The memo was mimeographed and copies were distributed to be shared with their peers.

A main emphasis of the program was individualized learning through constant diagnostic instruction.

Each child maintained a daily activity sheet and other records of activities and skill areas. The daily activity sheet reflected each child's progress, strengths, and weaknesses. It was a running profile for the student and the teacher. Temporary grouping for special instruction, acceleration or additional instruction in specific skills was determined by the diagnostic profiles that emerged.

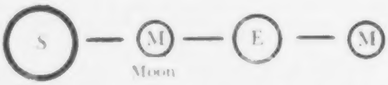
The main objectives of the programs were to improve basic skills. Special attention was placed on knowing when and how to skim read, rapid read, and study read. Students were encouraged to vary their reading rate according to their familiarity with the subject, the difficulty of the material, and their purpose in reading it. Emphasis was placed upon purposeful reading, versatility of reading rate, building a larger sight vocabulary, spelling, phrase reading, increasing the speed of eye focuses while decreasing the number of eye focuses, the "SQ3R" method (5) of textbook type reading, and meeting adequate comprehension criteria with an increased rate of reading. The program was redesigned periodically for each pupil to emphasize skills that were weak and to capitalize on strengths.

Evaluation of student progress showed gains in vocabulary, comprehension, and speed.

Materials and Methods for the Regular Classroom. The Centennial School District in Bucks County, Pennsylvania, also emphasizes individualized learning through diagnostic instruction. In addition to the similar use of the daily activity sheets at the junior and senior high levels, Centennial is experimenting with three other areas emphasized in the youth delinquent center project. The three areas are (1) The initial stages of a Pragmatic Linguistic Reading Program; (2) Phrase Reading material; (3) Aural Comprehension.

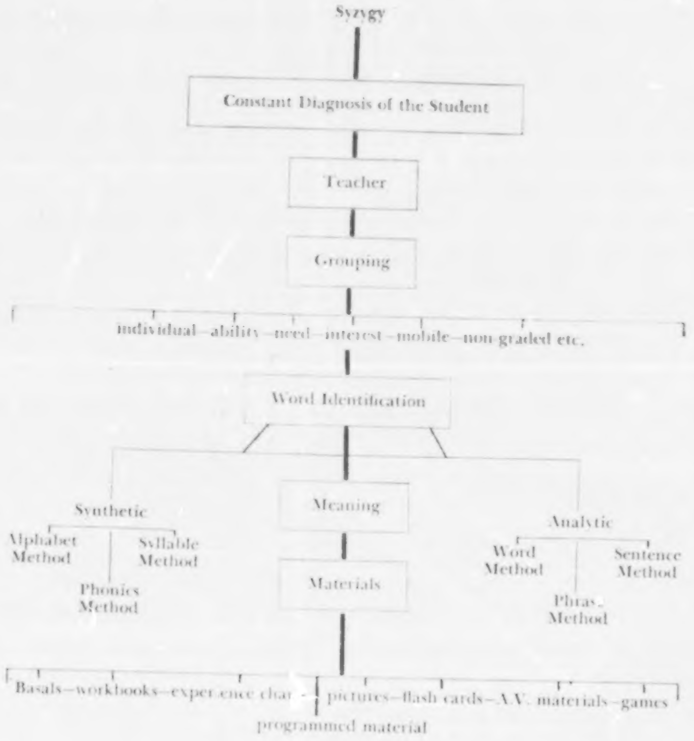
Dr. Everett A. McDonald, superintendent of the Centennial School District, has been seeking a svzygy in education. Svzygy in astronomy refers to a point where a body is in conjunction with or in opposition to the sun.

e.g.



In education this would mean a lining up of the student with the right teacher for that student, as well as the right method of instruction, material, set, circumstances, etc.

The Initial Stages of a Pragmatic Linguistic Reading Program. The proposed program is intended to blend the analysis of the individual and the analysis of the task to be accomplished. The program

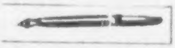

Syzygy
Constant Diagnosis of the Student
Teacher
Grouping
individual—ability—need—interest—mobile—non-graded etc.
Word Identification
Synthetic
Alphabet Method
Syllable Method
Phonics Method
Meaning
Materials
Analytic
Word Method
Sentence Method
Phrase Method
Basals—workbooks—experience char
pictures—flash cards—A.V. materials—games
programmed material

is, therefore, intended to provide concomitant visual, perceptual, auditory, emotional, motor and conceptual training.

The program is not intended to be used in isolation, nor instead of other reading or remedial reading programs. Rather, the program is meant to provide alternatives in presenting materials. For example, if a student is normally a visual learner and meets difficulty in learning a particular sound-letter relationship, the program would offer additional types of lessons to teach the skill. The additional lessons would offer other visual methods of presentation not associated with failure (e.g. if the difficulty was met in a book, then A.V. or game-like materials would be used) as well as other phonic, kinesthetic, or combination of methods as mentioned above.

It is suggested that the teacher and/or child maintain a skill profile or activity record. This should be designed to point out both to the teacher and the child the skills that have been mastered and the needs yet to be met. A properly recorded sheet provides the teacher with students to be grouped for additional or special instruction, or drill. The teacher can then evaluate the approaches that most often work in teaching each child (or whether the method of presentation makes any difference at all for the individual child. Most research seems to indicate that the method of presentation does not seem to significantly effect the results of a class as a whole. This does not mean that the individual is not affected.)

As it is necessary, alternate methods and alternate stimuli should be used until a skill is mastered. e.g.–Stimuli:

(a) Visual-Visual PEN 

(b) Visual-Auditory PEN –Say "pen" to yourself

(c) Visual-Auditory-Kinesthetic PEN –Look and say pen out loud

(d) Visual-Auditory-Kinesthetic-Tactile PEN –Look and say pen out loud as it is traced

(e) Visual-Auditory-Kinesthetic-Tactile-Rhythmic :

HEN MEN PEN	Look, say out loud, trace and rhythmically present a word family (of previously learned words) and allow the discovery of the word.

Cartooned material is presented which is in part intended to act as a vehicle for discussion of the expression of aggressiveness. The main function, however, of the material is to present the vocabulary words learned in a contextual setting. The content of the material can also serve in stimulating discussions of problems of adjustment. Therefore it may serve both counseling and skill using functions.

Some children respond best to aggressive materials. Others reject aggressive materials. The cartooned readers are intended for use with children that respond to aggressive materials.

The use of capital letters helps to reduce perceptual problems. There is less likelihood of reversing b and d, p and q when capital letters are used. Therefore, capital letters are used in the initial phases of the program.

Words are presented first in lists, then in context. "Words studied in lists are learned more quickly, remembered longer, and transferred more readily to a new context." (4)

Cue reduction is the refinement of a skill and the elimination of wasted motions. Materials are presented that are intended to aid the child in using fewer cues to determine letters and words.

The program attempts to follow other linguistic programs in presenting regularly spelled words. It shows minimal differences in patterned sets. However, vowel changes are not introduced until all consonant changes are made. All consonant-vowel "A"-consonant words would be mastered before another vowel would be introduced. This is an attempt to promote less vowel sound confusion by postponing comparisons. For example, changing the initial and final consonant patterns such as:

cap	cap
map	cat
sap	cab

would be mastered before a change in vowels would be introduced, *cap, cop, cup.*

Another reason for presenting the words in this way is that all linguistic readers do not start with a specific vowel pattern. Presented in this way, it should be easier for the child to "plug in" to any existing linguistic programs.

The readers do not read smoothly. It is therefore necessary to approach each page as a directed reading activity and to probe for meaning.

Parts of the program and the readers have been successfully used in an extended form with non-readers, delinquents, economically deprived, special education students (brain damaged), and adult non-readers.

Some children will require one activity once, others will require it several times. Some students may need all of the activities several times. Some of the activities prepared for the program are as follows:

A Tracing Machine with insert cards
A three letter visual letter wheel blending machine
Visual-Visual Cards, then cue reduction cards
See and Say Cards, then cue reduction cards
Rhythemic spell and say list
Visual Association Sheet
Context clue list—with student selection from a word box
Configuration Clues—(only when lower case letters are presented)
Electric light drill game with insert cards (the bulb lights only when the correct response is given).
Cartooned aggressive readers
Games (word BINGO, etc.)

Phrase Reading Material—A workbook and overhead presentation has been prepared.

The book has two related purposes. The first is to improve reading comprehension and the second is to improve the speed of reading comprehension.

Most poor readers read in a word-by-word fashion. Some of the readers attack words so slowly that by the time a sentence is completed the words that initiated it are almost forgotten. Word reading is not the same thing as phrase reading. The meanings of the individual words do not always indicate the meaning of a phrase. Some thoughts (such as "light headed"), are missed when read in a word by word fashion, e.g. "soft-hearted" is not the total of the individual words soft and hearted. Idiomatic and figurative phrases such as "to throw him a curve," must be thought of as a phrase rather than the sum of the individual words. (2)

Word by word readers limit their ability to use context clues effectively. Reading and thinking in thought phrases help in anticipating what will come next in a sentence. Word by word readers often have difficulty anticipating ideas and are more likely to substitute irrelevant words for the actual words.

The improvement of reading speed involves sufficient practice so that cue reduction occurs. In other words, the reader will become adept at taking in a group of words that constitute an idea with one glance instead of many glances. In addition, he will not have to see as much of the letters and words in the phrase in order to recognize it. Context clues also aid in this. A modified cloze technique is used. However, instead of leaving out every tenth, seventh, or fifth word, certain words are blackened in to allow the additional clue of configuration. e.g. The batter/hit the XXXX/ over the fence

Phrase reading should be mastered without any emphasis on speed. The first task is to break sentences into thought units. The second task is to see the thought units in one look. The final task is to determine the information given by the thought unit, how the information fits in the greater whole, the sentence, the sentence in the paragraph, and the paragraph in the selection.

After concentrated daily practice, the student will find that he is automatically phrase reading for ideas. Initially the student will find that using the suggested techniques takes him longer than the way he read originally. However, once the techniques are mastered and automatic, reading speed will improve dramatically.

The materials in the book are intended to be below the student's reading level so that the difficulty of the material does not interfere with the achievement of the mastery of the skill. Some of the exercises are drawn from E.W. Dolch's sight phrase cards which were made from the 95 commonest nouns and the basic sight vocabulary. Some of the stories are drawn from high interest low readability materials. Students find it profitable to refer to these materials for additional practice. Students experiencing difficulties in reading are guided to practice in graded materials. Other students may practice using a newspaper. It is necessary that students practice *daily* in order to establish new habits.

An overhead presentation is available for use with classes either before using the book or as a review after using the book. The use of tachistoscopic presentations of words and phrases to force concentration, shorten fixation pauses, and lengthen eye memory span is also recommended.

Experience with the delinquent's reading program has led us to the belief that phrase reading is an important aspect of instruction, in aiding both comprehension and speed.

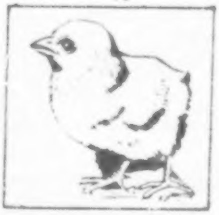
Centennial Aural Comprehension Test (6)

The delinquent and economically deprived often maintain the richness of their own language dialect. As with foreign students and some under-achieving readers, this raises concern for the correlation between the ability to discriminate meaningful sounds (phonemes) in English and the spoken English of the classroom. It is felt that the ability of the child to discriminate the phonemes of the English spoken in the classroom by the teacher will facilitate his identity of these same phonemes when they occur in orthographic sequences.

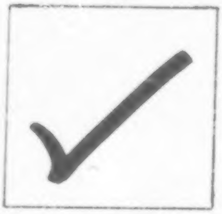
An aural comprehension test and pedagogical materials to accompany it are being prepared. Two equivalent forms are being constructed on the basis of linguistic principles. Illustrated materials for use by the student or teacher for self or group instruction is also being prepared.

The test and materials will contain forty-four segmental English phonemes. The test is administered with the use of a prerecorded tape which presents words for the student to identify from pictures. For instance, in the recording of the word "chick", the student selects from *chick*, *check*, and *cheek*. Since this particular item requires that student to identify the vowel phoneme in *chick*, he therefore discriminates this phoneme from the vowel phoneme in *check* and *cheek*, as shown below.

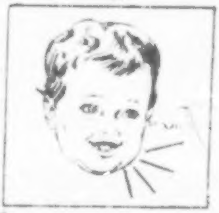
A



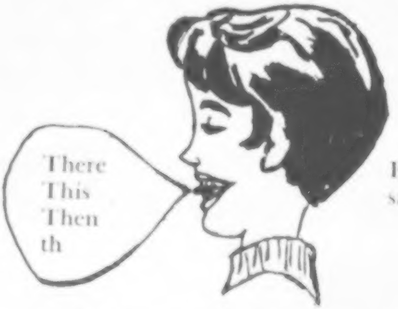
B



C



The test is intended to measure the aural ability of any type of student in discriminating phonemes in English. It is intended that the remedial program will compensate for any discovered student needs. e.g. practice exercise in pronouncing "th".



Bite the tip of the tongue and say, "There, this, then, those."

At this point the editors are editing items, doing item analysis, and trial runs. The reliability and validity of the tests are yet to be established.

It is hoped that in studying the uniqueness of situations (such as delinquents in a residential situation,) special programs and materials will evolve which will improve the quality of instruction in general.

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Reading and Revolution

Melvin Howards
Northeastern University, Boston

One could easily define revolution as moving in a circle, much as it occurred in *Animal Farm* with the resultant exchange of tyrannies. Education and revolution have little in common, and when one looks into American reading instruction, the connection is even slighter. We may be revolting sometimes, but revolutionary almost never. The massive pseudo-changes which have received so much publicity in the last five to ten years in reading instruction and in education generally are not only old hat in terms of their being repackaged programs, methods, and materials derived from earlier periods, but anything that even looks like change has come from outside the educational establishment. OEO, the Supreme Court, and the ever-destructive technology have made some ripples which we call tidal waves in terms of true educational change. So even if you would call some of these repackagings a revolution in education and reading instruction, you would have to agree that it is a slightly *used* revolution at best. Perhaps it is because some of us yearn so much for a revolution, a true process of rapid change, and even an overthrow of many established and ineffective methods, materials, and irrelevant research ratings, that we call the tinkering in schools and programs revolution. Alas, it is not so.

The key savior in this pseudo-revolution through which we are apparently going now, seems to be old fashioned S-R, rat-oriented psychology, and its prehensile limbs called technology. The electrification or programming of workbooks for college level students, or pacers, etc. is no change nor any revolution. Since we have invented no new skills to teach in the past two hundred years, the only thing the technology, taken from was activities, can offer is an electronically powered Pavlov—but saliva is saliva, no matter what. The technology does not in any measurable way change the quality of instruction or learning; in fact, I believe it diminishes it greatly for lack of the human interchange necessary for true intellectual growth and development. Accumulating facts and data is better done by machine, but students, at any level, supposedly, have other skills and talents to be developed by live teachers. Technology in education is not a revolution, it is a slightly frayed blanket for those who seek simple answers to complicated problems, or for those who compulsively demand order—real or imagined, but order. There is not time now for me to deal with the whole question of technology and its effect on teaching and learning reading, but I suggest you read McLuhan and

Norman O. Brown with all of your interpretive skills. They are talking about significant and pervasive behavioral change which reading people never talk about, and do even less about. More workbooks, more A, B, C grouping, more trivial research on whether group A or group B did better with relatively useless material, are not even near the issue.

The problems we face now in terms of truly efficient positive change in students in our reading programs are not so closely tied to workbooks or technology or even to the skills that need to be taught. The more basic and useful issue has to do with ways in which we can all expand and integrate the reading and language skills into broader and more significant contexts. We could all use a heavier dose of reality and relationship with other segments of our world. Change will not come within our typical four-walled classrooms, with whatever technological encumbrance we are playing. Change will come when we begin to ask other questions and seek our answers beyond the classroom walls, and beyond the borders of usual research. I like to say that the world is the curriculum and students are the authors. Let me take most of my time then, telling a bit about several projects I have been involved with for the past few years, which I believe begin to move in the direction of significant social change in terms of using reading and language skills as the core. Learning to read can be, and I have seen it be, a very powerful set of skills not only for greater literacy, but also for measurable personal and social change. Perhaps what I am talking about is not changing methods so much, although they need it, as do the usual materials, but changing the basic purposes for literacy, at any level. I want personal and social change to be a regular, planned, and somewhat predictable outcome of teaching red, black, and brown (and white) persons to read and write. I want them to use the literacy skills as the means of directly altering their lives.

Until August, 1969, I was director of a drop-out school in Boston, designed for 16-22 year old high school drop-outs in the Neighborhood Youth Corps. These kids were considered among Boston's least desirable and most troublesome youth. Many had police records and other problems. In the three and a half years this school was in operation, we worked with some 1200 youth. Some 50 of them earned high school diplomas from us (Northeastern University Center for Educational Development), half of them are currently in college, and half that number is on full-time scholarships. Something went right. One of the things that went right was that we developed with our kids an environment which was adult, honest, and demanding. The students participated quite fully in helping us to build our curriculum. For each sixteen-week term we worked in a core concept plan of curriculum, which basically integrated almost all of the curricular areas into a meaningful whole. Our staff counselled, made visits, tutored, taught, and helped in any number of other ways. The students knew that someone cared and was available, but that someone also required quality performance. We demonstrated, nonverbally as well as verbally, our belief that these kids could do the work presented at a higher level than they thought they could.

The school was basically divided into two groupings:

1. *Track groups* which included all those whose reading levels ranged from non-reader, non-English speaking, to about seventh-grade level;

2. *Core groups* which include everyone reading above seventh-grade level.

These latter groups were earning high school credits—three per sixteen week term. Our participatory, core-concept curriculum and the environment we were able to establish explain the success we had—and our students had. We did not invent new skills; we did make some new materials, but the heart of the success with those failed by their schools and society was to turn them on to making personal changes in the form of new learning, and then to help them see their role in society. Revolutions happened to many of our students; to others, little happened. But these personal revolutions and changes are significant since lives have been altered drastically, or at least noticeably. The skills are there, but also much, much more.

Another group of projects which has excited me and those involved, we call Master Tutor Training projects. We have done them with the Colorado Migrant Council, the Blackfeet Indians, the Oglala Sioux Indians, blacks in Massachusetts, and in special community educational centers project operating in four cities: Kansas City, Des Moines, Salt Lake City, and Omaha, and we are currently doing such a program in Boston through the Mayor's office and the Youth Activities Commission. In all of these projects we recruit local persons interested in improving their own literacy and general education, and who are also interested in helping others in their own community to do the same. These local persons, irrespective of their credentials—most of our master tutors do not have high school diplomas—are intensively trained for a period of time (dependent upon the contract and money available) in basic reading and language skills. They learn how to give, interpret, and implement an informal diagnostic analysis of reading problems; they learn how to plan core concept lessons and curriculum; they learn how to evaluate progress, set up groups, keep records, use a wide variety of materials, to use their life experience in their community as the raw material for reading and language instruction.

The first such project we did in Massachusetts with ten Master Tutors. They were trained for four weeks, including supervised field work for most of the time. They returned to their communities (five were in Boston, one each in five other cities), and they recruited and trained other local persons to serve as regular tutors. All were paid by the grant. Persons from my staff and I were constantly involved in visiting the centers which had been set up around the state for in-service work. In the course of the year, the Master Tutors had trained 120 regular tutors, 87 of whom stayed with the program. Over 400 persons were taught by these tutors, and the Master Tutors were hired by their agencies at the end of the year. Some of them are now enrolled in college courses. This changed the lives and the worlds of many persons. A revolution happened for many—not for all.

Our Blackfeet Indian Project was the first Indian Master Tutor project in the country. We trained for eight full days—morning, noon, and night. When it was over, the Master Tutors went back to their villages on the reservation, recruited students to teach, since we had no money for Regular Tutor training. Centers were set up in six villages where tutorial work for youngsters was carried on; Adult Basic Education and General Educational Development classes were run. A full-time field coordinator from my staff served for six months to provide the range of supportive in-service work. More than 50 persons on the reservation, including some of the Master Tutors themselves, have received their GED's in a little over a year. Several of them now want to take college courses and perhaps build a teaching career. The same kind of thing happened in the Colorado Migrant Council project, where we operated out of four centers around the state. There, many of the students were non-English-speaking Americans. College courses in extension are now being taken by several of these original Master Tutors. Several are enrolled at the University of Colorado in degree programs. Something changed.

There is not time to go into others, nor to give much more detail on these projects. I hope I have said enough to give you the idea which convinces me that we have at least begun to make changes—a series of small revolutions. I'll take my revolution person by person, group by group. Parades, placards, and fanfare do not make changes all the time—not long-lasting changes. Many of the persons in these programs I have mentioned live differently now, think differently. One example, the Blackfeet Master Tutors, having worked for almost a year in teaching other Blackfeet to read and write, became quite interested in what was happening in their own schools. Their schools are public, not run by the Bureau of Indian Affairs. They decided they'd like a Parent-Teachers' Association—there has never been one on the reservation. They presented this revolutionary notion to the administration and teachers and were slapped down. They are still working on it. They want to participate more in their children's education. The teachers have always said things like: "Indians don't care about education or their kids—they all drink, etc." Now that the Indians on that reservation want good middle-class things for their children, at least in education, the teachers are afraid. The teachers there know that the Master Tutors are quite skilled in teaching reading, language skills, etc. They have succeeded, and they know what they want. Such informed persons are powerful, and they are beginning to get that power. That's a revolution.

In essence what I am really saying about educational change or revolution is that all education deals with making choices; making choices requires an awareness of alternatives, and it requires the ability to anticipate the consequences of these alternatives. And the heart and soul (which is less theological than it is political these days) of all choice is information; knowledge and information, which are derived by individuals capable of reading and understanding what is read, make it possible to have choices—in short, to exercise some freedom and some control over the conditions under which they live. We can and do change ourselves and parts of our world when we have this kind of power: brainpower which is based so largely on the ability to get, organize, reflect upon information, facts, ideas, etc. If you cannot read, I tell those persons in various programs, then I have more power and freedom than you do. I get to make choices for you and for me. Learn to read and write effectively and you can decide for yourself. There is little other freedom in this society. It is revolutionary to provide persons discarded by our society and its entrenched institutions with fundamental skills and understandings so that they can get their own information and make their own decisions. I want informed revolutionaries though not the incendiary type. Education as I have briefly sketched it has within it the basic fuel to move them toward greater personal and social independence and choice. Reading is more than workbooks, pacers, basal readers and worksheets—ever so much more, and we don't need the current crop of technological gadgetry to achieve the ends I speak of. We need instead to use the life and language experiences of those we wish to teach.

The Role of the Individual Learning Center in Effecting Educational Change

Dayton D. Hultgren
Macalester College

Most of us are pleased to be a part of the college in which we work. Somehow these educational institutions influence their students and their environment for better, they do good things for people other than their employees, they affect people's lives. There is excitement because something important is going on. We would say our institutions are effective and alive. The importance of effectiveness or aliveness as a criterion for measuring institutional vitality is underscored by the recent studies of Kenneth Feldman, Theodore Newcomb, and Nevitt Sanford.

We are not so content with our lot in our local colleges when their vitality is measured by a second criterion, considered equally important by educators today, the criterion of responsiveness or adaptability. Institutional responsiveness is best described for me by Samuel Capen (1, p. 38), Chancellor of the University of Buffalo, when he suggests that the surest index of college vitality is "its readiness to alter its methods, requirements, or the content of its curriculum with a view both to offering the students richer opportunities for self-improvement and to equip them better to perform the duties of present-day citizenship and professional practice." John Gardner (2), in his commencement address to Cornell University a year ago, also made a plea for the urgent business of building flexibility and responsiveness in our colleges so that academic reform is more continuous and effective. Continual academic change, beyond occasional reform, beyond reaction to crises, beyond the spurts of housecleaning, requires a policy of innovation and reform which is foreign to some of us and, perhaps, to many of our colleges.

It has been said that the innovator typically builds a new institution or model to replace the old, the reformer revamps an existing institution to make it better, and the traditionalist suspects them both of faithlessness and treachery.

FORCES FOR EDUCATIONAL CHANGE

Many of us know from first-hand experience that the rate of change in our colleges varies with that in our society. Education isn't the tail that wags the dog of society. Society determines the direction that education will follow. We know from first-hand experience the total disruption which results from a college's move between radical restructuring, on one hand, and rigid reaction, on the other. In higher education today we are caught up in the processes of serious, rapid, and continuous change because our society, likewise, is caught up in serious, rapid, and continuous change.

We speak with reluctance about the few major financial benefactors who are drawn to some of our colleges, and, we feel, are more concerned with starting new and innovative projects than with supporting existing programs and budgets. Yet, I suggest it is the flow of these resources which underlie and help to determine a college's capacity for academic change. Also, these financial benefactors seem not to properly appreciate the importance of what many are doing in higher education. They seek out, as the primary instruments of change in education, some individual advocates of new knowledge—pioneers in fields, the evangelists of learning—who look for means with which to teach and explore and for students to win and inspire. It seems clear that behind every advocate necessarily stands a patron or a group of supporters, willing to be convinced of the benefits of new enterprises.

The New York State Regents Advisory Committee on Educational Leadership (4, p. 4) recently observed that such advocates of academic change usually come to a college through the mechanism of replacing institutional leaders and members with newcomers from other colleges or from outside the educational system altogether.

With the support of the Kettering Foundation, the staff of the Institute of Higher Education at Teacher's College, Columbia University, recently completed a study of institutional vitality reported by Hefferlin (3, pp. 74-104). Regarding advocates for change, they found that administrators more frequently named administrators as the initiators of change than they do the department chairmen or professors, that chairmen more often identify chairmen as instruments of change than do administrators and professors, and that professors rate themselves as advocates of reform much higher than do administrators. Combined, these three groups of academics claimed 80% of the initiative for change themselves. The report expresses surprise that academics—whether department chairmen, professors, or administrators—tended to see themselves as more important advocates of reform than their colleagues. One can only express surprise at their surprise. Was it ever otherwise with academics?

STUDENTS IN EDUCATIONAL CHANGE

The most telling finding of this study, it seems, is that none of the academics assigned a major advocate role to the major academic body in any college or university, the students. The students are invariably overlooked in our analysis of educational change processes. Education exists for their benefit, and education should be designed to take into account their abilities, their interests, and their aspirations. Fitting students to colleges and universities, rather than fitting institutions to students, is, in my judgement, a basic shortcoming of higher education today. Students now, more than ever before, are demanding a larger role in determining academic policies and practices which directly bear upon their lives. Students believe that institutions of higher education are not sufficiently in touch with the conditions of life in our surrounding society. They are most convincing in their perceptive observation that the entire range of purposes of the instructional programs, the teaching staff and facilities, the relationships to the community, are urgently in need of re-examination, re-evaluation, and modification.

CONCEPT OF INDIVIDUAL LEARNING

The students' entry into the mainstream of the exploration of new possibilities for better education has led to the development and current usage of the concept "individual learning". While the precise definition and meaning of the concept still lacks clarity, it is generally agreed that "individual learning", carried to its logical conclusion in the college setting, encourages the student to establish his own educational objectives and requires the college or university to assist him in utilizing available educational resources in attaining these objectives.

This concept, with all of its implications, identifies the single most powerful and reforming force in higher education today. The fact that a majority of today's students participate in and accept responsibility for their own education in ways not previously known makes it so.

Macalester College has made such an institutional commitment to "individual learning". In September of this year a facility called the Individual Learning Center was established at the college specifically to explore the meaning and implications of the term and to assist students in planning and directing their learning through the college years.

INDIVIDUAL LEARNING CENTER AND THE COLLEGE

The Center is a participating resource in a number of college-wide efforts to give systematic attention to some of the most influential forces available for student learning.

For instance, the influence of peers as an important component of student learning and of shaping student values and cultures is under exploration. Educational richness in the student culture is encouraged through defining of standards of quality which provide alternatives to board scores as criteria for selections of new students; through encouragement of student self-criticism, mutual student criticism, and faculty appraisal combined with student effort in ways not directly affecting grading; through the involvement of student selected leaders in the college processes of planning, goal setting, and administration; through the establishment of new patterns of living, reflecting student's rights and freedoms, which incorporate classroom and residence experience with personal growth and maturation; and through efforts to fit library and other learning resources to the developing needs of students both in and outside of the classroom.

A second influential force available for student learning under study has to do with deep and sustained experience of students in sufficiently diversified off-campus environments. The curriculum has begun to focus on surrounding urban and rural communities where significant social problems are drawn into the classroom. Also, a majority of students are able to study and travel abroad for varying periods of time.

A third college-wide effort is directed toward increased participation of students in college affairs. Initial exploration led to the recent development and adoption of a document called "Students Rights and Freedoms", which guides the relations of all members of the academic community in their relations with students. Students hold membership on college-wide committees dealing with governance, curriculum, personnel, and community relations. Also, there is now under consideration the creation of a college-wide assembly in which students hold voting membership with other members of the college community.

Finally, the Center is a participating resource in a college-wide effort to maximize the impact of faculty upon students in non-course relations. A significant illustration of the potency of this force is found in the college's current experiment in what it calls "Inner College," a radical departure in educational practice on an experimental basis in which a group of students work independently of all curricular structures in collaboration with faculty preceptors, with credit and grade for such self-directed learning to be determined by the students on their personal certification of accomplishment. Through independent study, students negotiate with faculty of their choosing an agreement to pursue learning in depth in an area of interest to them and within the general competence of the faculty member. The impact of faculty upon students in non-course relations can be seen in a proposal under consideration which would bring small groups of new students together with faculty for off-campus living and intellectual explorations in depth for a period of weeks prior to the opening of the Fall Term.

INDIVIDUAL LEARNING CENTER AND SERVICES

The Individual Learning Center, itself, during its three months of existence has evolved a set of service relationships with students around what may be called the more traditional academic concerns. Students have been helped with identifying and developing independent study projects on and off campus. Assistance has been given to students in their struggle to relate classroom learning and degree programs to personal and life goals. They have been assisted in testing the limits of flexibility of some college policies in their effort to secure what they consider a meaningful personalized education.

The Center has evolved a set of service relationships with students around the improvement of their basic educational skills. Members of the staff work with students on the improvement of skills related to reading, spelling, vocabulary, study strategies, taking examinations, writing paragraphs and reports. Students bring class work into the Center for discussion, evaluation and planning. With the assistance of the library staff, orientation sessions on the procedures and services of the library have been provided, and written guidelines for using the library and writing research projects have been prepared. The Center joined with the International Center on campus to provide a service to improve the use of English as a second language for international students. The Center offers a credit course entitled "Practicum in Educational Skills Development" where, through the review of pertinent literature is psychology and education as well as through practicum experience under supervision, enrolled students are prepared to aid other students on skill improvement. The Center is collaborating with the audio-visual services in using the video tape library of lectures for teaching students with limited educational backgrounds.

The Center has evolved a third set of relationships with students around the tutor functions of a number of upper-class students. In order to improve the effectiveness of upper-class tutors, a training and supervision program which will systematically and efficiently equip tutors to perform their functions is now under development.

The Center has evolved a fourth set of relationships with faculty members around the use of the term "individual learning," its meanings and implications for the classroom. Papers on classroom innovation have been prepared or reviewed for discussion. Faculty in mathematics, psychology, and education have begun to sequence course content in terms of competency packages with check tests to accommodate students' individual learning needs and styles.

THE BIG QUESTIONS

Does the commitment to this concept of "individual learning" significantly demonstrate the responsiveness of the college to the needs of today's students? Does the creation of the Individual Learning Center make possible the continuous and effective academic adaptability required by student directed learning? Only time and hard work will provide an adequate basis for dealing with these questions.

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The Third Annual Report of the Phonetic Skills of Teachers

Joseph Ilika
Lamar State College of Technology, Beaumont, Texas

Former investigations of teacher competency in word analysis have for the most part been paper and pencil tests as was the case with Gagon (16) Farinella (15), Aaron (1), Spache (34), Broman (4), Ramsey (27), Gibson (18), Henriksen (20), and Ilika (22, 23). The very nature of phonics instruction presupposes a teacher's familiarity with phonetics and the basic sounds of the English language in their various spellings. Paper and pencil tests deal with symbolic representations of the sounds and may overlook factors of phonetic descrimination that ought to be measured more directly.

The direct route to investigating phonetic competency is supported on practical grounds by Cordts (1955) who has noted the rarity of "teachers who can hear the sounds in a word regardless of the letters that represent them. . . ." (8, p. 81).

Shannon's (32) results with the tape-administered *Phonetic Script Test* showed that college methods course work and course work in phonetics failed to improve the ability of students to relate speech sounds to a different orthographic system. Gagon (16), however, found that teachers with course work in phonetics achieved higher mean *Rogers Phonic Ability Test* scores than teachers with methods of reading courses.

Shannon (32, p. 136) found that the tape-administered *Phonetic Script Test*, PST, which measures the ability to learn to associate speech of orthographic symbols, has correlations of 0.739 with ability to identify phonemes when no clue is supplied, and 0.666 when the phoneme to be identified is specified. The same ability correlation 0.586 with an understanding of phonic principles of the type tested by Aaron (1) and Farinella (15).

Shannon disclaims the existence of common elements in the significant intercorrelations of the previous factors. She concludes that the preceding "variable may reflect a discrete linguistic ability which influences perception of sound symbol relationships." (32, p. 140). Since the preceding conclusion is based on a listening mode of testing, it appears that future testing research of teacher word-analysis abilities should determine the dimensions of the discrete linguistic ability to decide whether listening for sounds rather than reading symbols of sounds is subsumed in the discrete variable alluded to by Shannon.

Shannon also found that social class was not related to phonetic variables; but intelligence, reading, and spelling were related to phonetics. In the most recent research by Gibson (18), Henriksen (20), and Tyre (37) there has been no mention of the possibility that dialect is related to phonetics even though their testing was done in Louisiana, Georgia, and Mississippi.

Tyre (37) employed three methods in a college reading methods class to determine their effectiveness in the improvement of word-analysis skills. None of the *California Phonics Survey* (CPS) pre- and post-test differences were statistically significant.

Tyre's (1968) finding confirms Shannon's conclusion that methods courses fail to improve the phonetic skills of students. It should be noted the CPS has a heavy emphasis on listening to sound symbol relationships which may not have been stressed in Tyre's three methods of teaching.

From the preceding review it is apparent that further assessment of phonetic analysis competency and development is needed to supplement and clarify some of the issues mentioned. The review also brought forth the fact that testing by listening has played a very small part in the previous research. It also is apparent that teacher's auditory discrimination does not change with the ordinary methods courses. The relationship of phonetics to social class, intelligence, reading, and chronological age have been lightly mentioned. Investigations have not reported measures of hearing, articulation, and dialect as related to phonetic skills of teachers.

Therefore, the purpose of this investigation is to explore old issues further and some new issues which are embodied in the following null hypotheses:

1. There are no significant differences among teachers and undergraduate elementary education majors, and speech majors in phonetic skills as measured by the *California Phonics Survey*.

2. There are no significant differences between teachers and students in the CPS sub-test categories.

3. There are no significant differences between students who scored highest and who scored lowest on the CPS on the following variables:
   a. Dialect differences as judged from the taped oral reading of the "Rainbow Passage" of Grant Fairbanks (14)
   b. Hearing tests for hearing difficulties.
   c. Speech screening test for speech development.
   d. Socio-economic status.
   e. Chronological age.
   f. Henriksen, *Teacher Word Analysis Test*.

PROCEDURE

To test the first hypothesis an analysis of variance was applied to the total test scores to determine the F-Ratio. A z test was also applied to differences between the means scores of graduates, elementary education undergraduates, and speech major undergraduates.

To test hypothesis two, the total errors by categories were determined for each group. The z test was applied to the proportion of errors by category and by groups to determine whether there were statistically significant differences.

To test hypothesis three, the thirteen highest and thirteen lowest scoring students from two different semesters of testing were selected for more detailed investigation.

The high CPS group had a mean score of 73.61 and a standard deviation of 0.62. The low CPS group had a mean score of 51.69 and a standard deviation of 4.51. Both groups were then involved in the following activities to secure data necessary to test hypothesis three:

(1) Each subject was tape recorded and identified by number as he read the first paragraph of Grant Fairbanks' "Rainbow Passage." (14) Three speech therapy staff members listened to the tapes independently. Their task was to indicate whether the subject's oral reading reflected American General Dialect or a divergence from American General Dialect. The independent judgments formed the basis of the Chi-Square test.

(2) Audiometric tests were administered.

(3) Hejna Articulation screening surveys were also administered.

(4) Parent occupations were requested on a survey form along with other data.

(4) Parent occupations were requested on a survey form along with other data.

(5) The verbal scores from the College Entrance Examination Board were sought for the 26 subjects but only 11 were available.

(6) Warner's socio-economic occupational index was used to classify family occupations. (38)

(7) The Henriksen *Teacher Word-Analysis Test* scores were available and were included for the two groups.

THE SUBJECTS

The subjects were: (1) 78 graduate students who were also elementary school teachers in the local schools, (2) 252 undergraduate elementary education majors who were enrolled in undergraduate classes at Lamar College from 1965-69, (3) 41 speech majors and speech therapy majors who were enrolled at the same institution. Most of the students lived within a radius of 150 miles of Beaumont, Texas.

THE INSTRUMENT

The validity and reliability of the CPS, which was formerly "A Group Test for Ascertaining Ability in Phonetic Analysis Among College Students," Cottrell (10, 5), has been described in the test manual in detail. The survey was designed to screen college students who had difficulty in reading aloud with meaning and accuracy (5). All but one sub-test of the CPS is administered by listening and reading to match or rhyme sounds with words and nonsense words.

The tape recorded version of Form 1 was used in this report. The dialect of the male speaker who read the test instructions was classified as American General by one of the test authors in a personal communication.

The writer has found CPS correlations with the following tests with elementary education majors:

Test	N	r	P
1. Verbal, CEEB	34	.436	.01
2. Henriksen, *Teacher*	37	.68	.05
Word Analysis Test	42	.679	.01
3. Aaron *Phonics*	77	.597	.001
Principle Test	21	.539	.01

The CPS appears to have significant positive correlations with a number of measures which should provide ample opportunities for future factorial analysis research.

The sub-test categories which were used to test hypothesis two include the following:

I-A: Long-Short Vowel Confusion
I-B: Other Vowel Confusion
II-A: Consonants: Confusion with Blands and Digraphs
II-B: Consonant-Vowel Reversals
III: Configuration
IV: Endings
V: Negatives and Opposites: Sight Words
VI: Rigidity

THE RESULTS

Table 1. *Analysis of Variance of Graduate and Undergraduate CPS Scores* reveals that the F-Ratio was not sufficient to reject the null hypothesis and there were no statistically significant differences in the three groups.

TABLE 1

Analysis of Variance of Graduate and Undergraduate CPS Scores

Source of Variation	d.f.	S.S.	M.S.	F—Ratio
Between	2	245.70	126.53	2.73 N.S.
Within	255	11479.40	45.02	
Total	257	11725.10		

Table 2, *Comparison of Mean CPS Scores by Graduate and Undergraduate Groups* reveals one statistically significant difference between the mean scores of the undergraduate elementary education and speech majors.

TABLE 2

Comparison of Mean CPS Scores By Graduate and Undergraduate Groups

n	m	S.D.	n	m	S.D.	S.E.$_D$	z
	Speech				*Graduates*		
41	68.56	5.96	78	66.85	6.919	1.70	1.40
	Speech				*Undergraduate E*		
41	68.56	5.96	139	65.82	6.80	2.73	2.49*
	Graduates				*Undergraduate E*		
78	66.85	6.92	139	65.83	6.80	1.03	1.06

* Statistically significant at .05 level.

Table 3, *Comparisons of Undergraduate and Graduate Students CPS Error Scores by Categories* reveals very few statistically significant differences between the graduate students (teachers) elementary education majors, and speech majors. The important exception is the statistically significant difference in long and short vowel low error score proportion of the teachers.

Speech majors appear to have considerably more difficulty with endings than the education majors.

The significant differences in rigidity, a complex variable related to phonics in previous investigations (5), appear to favor the undergraduate elementary education majors.

The null hypothesis is rejected to the extent that there are significant differences in Table 3.

TABLE 3

Comparison of Undergraduate and Graduate Student CPS Error Scores By Categories

CPS Category	Undergraduates %	Graduates %	Speech %	z_{U-G}	z_{U-S}	z_{G-S}
I-A: Long-Short Vowel Confusion	18	13	20	2.98**	0.67	3.13**
I-B: Other Vowel Confusion	10	11	9	0.65	0.45	0.99
II-A: Consonants: Confusion with Blends and Digraphs	9	8	6	0.77	1.46	1.15
II-B: Consonant-Vowel Reversals	9	8	6	0.77	1.46	1.15
III: Configuration	21	22	20	0.55	0.32	0.75
IV: Endings	0	0	4	0	4.78**	12.65
V: Negatives and Opposites; Sight Words	2	3	2	1.29	0	0.95
VI: Rigidity	16	20	24	2.11*	2.69**	1.53
(Unclassified)	12	11	9	0.65	1.27	0.88
III: Configuration VI: and Rigidity	37	42	44	2.10*	18.8	0.62
Total Number of Errors	2352	506	260			
Number of Students	252	78	41			

* Statistically significant at the .05 level.
** Statistically significant at the .01 level.

Table 4, *CPS Correlations With Verbal Score, Age, and Teachers Word Analysis Test* reveals that there is a positive r of 0.43 on the verbal score for eleven of the 26 subjects. It was found that many of the low scorers on the CPS were transfer students and people working for state certification and they did not have verbal scores on their transcripts. The positive verbal r does not seem unreasonable in terms of previous reports.

The negative chronological age r of -0.452 is also reflected by the high CPS group mean CA of 23.92 years as compared to the mean CA of 33.30 years of the low CPS group. The statistically significant

CPS Henriksen *Teacher Test of Word Analysis* r of 0.73 is higher than the r reported earlier.

TABLE 4

CPS and Correlations With Verbal Score, Age, and Teacher Word Analysis Test

Factors	N	r	P
Verbal Score on CEEB	11	0.43	N.S.
Chronological Age	26	-0.452	0.02*
Henriksen, *Word Analysis Test for Teachers*	26	0.73	0.001***

* Statistically significant at the .05 level.
** Statistically significant at the .01 level.

Table 5, *Comparison of High and Low CPS Groups in Terms of Dialect Evaluations* reveals that the Chi-Square of 5.65 with 1 degree of freedom is statistically significant at the .02 level and sufficient cause to reject the null hypothesis that there is no significant difference in high CPS and low CPS subjects and dialect evaluations.

TABLE 5

Comparison of High and Low CPS Groups In Terms of Dialect Evaluations

	American General	Other	Total
High CPS	36 (18)	3 (1.5)	39
Low CPS	26 (13)	13 (6.5)	39
Totals	62	16	78
$X^2 = 5.65$	df=1	P=.02	

Table 6, *Comparison of High and Low CPS Groups in Terms of Socio-Economic Status Occupational Groups* reveals that the Chi-Square of 5.42 with 2 degrees of freedom is not statistically significant at the .05 level and thus the null hypothesis is accepted.

TABLE 6

Comparison of High and Low CPS Groups In Terms of Socio-Economic Status Occupational Groups

	I, II	III, IV	V, VI	VII*	Totals
High CPS	4 (2)	7 (3.5)	2 (1)	0 (0)	13
Low CPS	1 (.5)	5 (2.5)	6 (3)	1 (.5)	13
Totals	5	12	8	1	26
$X^2 = 5.42$		df=3		P=<.10	

* Warner's classifications.

DISCUSSION

The mean total CPS score difference between speech majors, of whom a major portion were enrolled in a course in phonetics at the first mid-term testing with the CPS, and undergraduate education majors may be interpreted to be partially attributable to knowledge of phonetics and other factors not measured.

The mean score of graduate student teachers is higher than that of the undergraduates, but the difference is not statistically significant.

The finding that there are no significant differences between teachers and undergraduate education majors on the total score falls in line with some of the findings by Tyre (37), Shannon (32) and Henriksen (21). Further testing and analysis are needed to determine the extent to which such a lack of difference really influences the instruction of reading. To date, Gagon (17) and McCollum (24) are the only investigators to show conflicting conclusions in terms of high and low mastery of phonics skills by teachers as related to pupil gain in reading achievement.

The results from Table 3, concerning the absence of phonetic category differences falls in line with Tyre's (37) findings. Further research needs to evaluate the types of reading methods courses which also influence improvement in such categories as vowel confusion.

It could be as Spache (34) found, that teaching experience did influence the teachers' knowledge of vowels when vowel categories are combined. The graduates have a lower percent of total (I-A and I-B) vowel errors than the undergraduates and the difference is statistically significant at the .05 level.

In view of the fact that the rigidity and configuration errors are high, and that they account for 37, 42, and 44 percent of the total errors on the CPS, it would appear that rigidity is attributable to too great reliance on configurational clues in word attack (5 p. 23). Further research is necessary to determine the possibility that an intellectual type of rigidity, wherein the subject is too bound to rigid utilization of phonetic rules and unable to dissociate auditory from visual perception of words, is related to low scores in the total CPS score.

Ramsey's (27) students reported that they did not have a heavy emphasis of phonics. If this were true of the present population, a high error score might be attributed to the absence of early phonics training.

The third set of hypotheses fall in line with some of the existing findings mentioned earlier. Thus, there is a low non-significant CPS correlation with a verbal score measure in the high and low sample CPS students.

The negative CPS correlation with chronological age ($r = -0.452$) was an accidental discovery and happened to be available for observation from the CPS profile sheet. This finding is consistent with Shannon's finding that older graduate students, who had courses in reading, had a negative correlation (r = —.377) between teaching experience, or age, and *PST* measure of ability to associate speech sounds with new orthographic symbols. Shannon reasoned that slower reaction time is associated with age to influence the scores on the *PST*. This line of reasoning may also be applicable to the low scoring CPS subjects who were on the average 10 years older than the high scoring CPS subjects.

The lack of differences on the Hejna Articulation Survey and the audiometric screening is not surprising, since these tests are used to screen teacher candidates.

The absence of social class differences is also indicative of Shannon's findings in this area.

The significant differences in dialect judgments suggest that the low CPS subjects who had slight or definite differences in dialect may have found the American General Dialect of the male tape-recorded voice too diverging from their normal dialect, as they listened to the CPS. The finding that is surprising is that more students were not classified with dialect differences from American General Dialect. Further investigation is needed to ascertain the influence that teachers with varying degrees of phonetic skill and dialect yield on student growth in word attack skill and reading achievement.

The statistically significant r of 0.73 with the Henriksen *Teacher Word Analysis Test* comes as a surprising increase over the earlier correlation of 0.68. The two tests have some overlap in measuring abilities and represent an improvement over the lower r's between the CPS and the Aaron test mentioned earlier. This finding also may justify more extensive usage of the CPS with teachers for future improvement in phonetics. The CPS correlation of 0.68 and 0.73 with the Henriksen *Teacher Word Analysis Test* would prove to be an interesting subject for research to determine the extent of overlap in such factors as both sub-test categories purport to measure.

FINDINGS

1. No significant differences between graduate students, (teachers), and undergraduates were found on the CPS total score.
2. Speech majors had a statistically significant total score CPS difference when compared to the elementary majors.
3. Teachers had a better mastery of vowels than both undergraduate groups and this may be attributed to experience.
4. No significant differences in social class, hearing, and articulation were found in the high and low CPS group comparisons.
5. Age was negatively correlated with the CPS.

6. The Henriksen *Teacher Word Analysis Test* was positively correlated with the CPS.
7. Dialect divergence from American General was significantly greater among the low CPS phonetics group.

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Open Enrollment: Challenge to the College Reading/Study Skills Program

Gene Kerstiens
El Camino College

As the number and size of colleges grow and as bona fide open enrollment becomes more a reality than an issue, the reading/study skills experience of a large California community college may take on a dimension of some moment. Our problems, successes, and failures are representative of those that are emerging throughout the country.

THE PROBLEM

Here is some indication of what is meant by the word *large*. The fourth largest single-campus community college in the state has an enrollment of over 17,000 students, 98% of whom reside in its ninety-square-mile district with an urban-industrial population of 500,000, .25% of the U.S. population. Within the district and serving as immediate feeders to the college are eighteen high schools, 40% of whose graduates enroll immediately after graduation. Classes are in session fifteen hours a day, five days a week, except for holidays and three one-week registration periods during which as many as 52,000 active class cards are processed to fill 1,900 classes per semester. For this commuting student body, car logistics alone include 4,000 on-campus parking spaces to accommodate 14,000 student cars, many of which arrive on a seventy-mile-an-hour traffic jam—the Los Angeles Freeway system. There is no particular virtue in size, but we necessarily deal with large numbers.

The term *California community college* has deeper implications that concern a reading/study skills program, chief of which is open enrollment: any district resident who is a high school graduate or has reached eighteen years of age can attend tuition free. Such entrance criteria are not likely to draw an academic elite; nevertheless, most students aspire to engage in a genuine college-level experience. Inevitably, circumstances like the following arise: The average reading level of our students is tenth grade. Only 6.8% of entering freshmen are able to meet the University of California's entrance requirements, and fewer than half are eligible to enter a California state college. The present school-wide rate of course attrition is 23%. Failing to achieve or maintain a C average, 21% of our student body is on academic probation. And whatever their goals upon enrollment, only an estimated 20% transfer to a four-year college, where, interestingly, their upper division performance is only one-fifth of a grade-point lower than that which they had accrued in their lower division courses (Garlock (3) p. 7, Table 1).

RATIONALE

Faced with these prospects, the English Department, under which reading/study skills courses operate, initiated a program two years ago that attempts to be efficient and humane. Quite frankly, our immediate concern was to assist students whose weaknesses affected achievement in required courses in our own discipline. However, to the extent that communications skills are necessary for success in other content and skill areas and to the extent that other departments choose to designate English courses as prerequisites, the program serves the whole school.

Our idea is a pragmatic one: not only to get the student into a meaningful course as quickly as possible and with a minimum of administrative fuss, but also to provide options that will make him aware that the system is not unyielding and that he is regarded as something more than just so many oddly-arranged slots in a computer card.

TESTING-PLACEMENT

An outline of the testing-placement process follows:

(1) Except for students who enter with English credit from other colleges, all students who take an English course (reading/composition or reading/study skills) are required to take a placement test. As a testing instrument we chose the Purdue Placement Test for English, which provides cut-off scores almost as reliable as those of the Cooperative English Test and also provides even sub-scores useful in preliminary diagnosis: Recognition of Grammatical Errors, Punctuation, Sentence Clearness and Effectiveness, two Reading measures, Vocabulary, and Spelling.

(2) Based upon his score, a student is computer-programmed into a course or is provided with computer assigned course options that best match his capacities or diagnosed needs.

(3) Five days after taking the placement test, the student can pick up his computer card results, listing his name, percentiles of sub-test scores, total score percentile, and a sub-total percentile on four critical sub-scores (see flow chart, p. 4) that relate to placement in reading/study skills classes.

(4) At the end of each testing season and before semester classes begin, every counselor and English instructor receives an alphabetized list of test results containing the information on every student's computer card.

Criteria for Placing Students Into English Classes According to Results on the PURDUE PLACEMENT TEST FOR ENGLISH

* This score divides the highest per cent of the students from the lowest 56 per cent of the Total Purdue Test Scores.

** This score was obtained by using 16 per cent of the total population as the amount to divide the lowest scoring students from higher scoring students based on Total Subtests "RRVS" Scores.

*** This score corresponds to the score of the highest six per cent as determined by the Total Test Scores of the group having the conditions: (1) below the 56th local norm percentile of the Total Test, and (2) above the 16th local norm percentile of the Subtests "RRVS."

**** This score corresponds to the 50 percentile of those in the upper 44 per cent of the Total Test based on Total Subtest "RRVS" Scores.

(5) A student is allowed to retest during any of the tri-yearly testing seasons to qualify for additional courses or to advance himself in the program.

(6) At any time after being tested and irrespective of test results or grades, any counselor or English instructor, with the consent of the student, can recommend and achieve placement for a student in a course that would otherwise be denied him via computer programming.

(7) At some time during the pre-registration period, a student may discuss his placement options and/or strengths and weaknesses reflected in Purdue sub-scores with a counselor, individually or in a group counseling situation. Ninety-five percent of full-time students take advantage of one or both of these counseling modes.

COURSES

The existential rationale for courses, if not to divide and conquer, is to identify a student's needs so that he may receive appropriate treatment *before* scholastic anxiety sets in. In California community colleges such reparation necessarily takes place in courses *per se*, since state subsistence is obtainable only for instruction that earns credit applicable to degree requirements.

Of major concern are the students who score low on the placement test—the linguistically lame students comprising the lowest 16% of our population. Predictions of their success are not promising, and, unaided, their probability of failure even in a remedial reading/composition course is 45% (Elmgren, and others (2) p. 4). According to Durkee (1), if this probation-prone student is not given competent, systematized, sympathetic treatment before being officially placed on probation, his latest exposure in a reading/study skills program will not appreciably improve his chances in academe. Having been identified by the placement test, this student is placed in English R, Basic Reading, a four hour, eighteen-week laboratory, the floor of and corridor to other courses in the program. At this writing, 85% of the students who finish English R are eligible for advancement.

Two other laboratory courses round-out the reading/study skills program. English 2R, Developmental Reading, serves the weak to average reader who chooses to sharpen his skills. Students scoring between the 17th and 56th percentile (local norms) are offered this course option. Pauk (5, p. 58) has characterized this group as a type that can adequately read narrative and light denotative materials, but have not mastered the skill of study-reading. English 1R, Power and Speed in Reading, designed for the above average to superior reader, is a course provided those who score between the 57th and 99th percentile, those who would reach "2,000 WPM" or would improve their presumably already adequate skills.

Because the above-described reading/study skills courses are integrated with the entire English program and because the same testing-programming device is used to place students in all the service courses in the system, a brief description should be given here of three reading/composition courses. English A, Basic English (bonehead English), open to students who score between the 17th and 56th percentile, is a remedial composition course that functions chiefly as an avenue to the following two courses for which a student does not otherwise qualify. English 2A, Functional Reading and Writing, fulfills one-half the communications requirement for the two-year Associate in Arts degree. English 1A, Reading and Composition, is a transfer course that satisfies all or part of the English requirement of the four-year college.

REFINED PLACEMENT

The flow chart, above, indicates in computer terms how students are initially programmed into courses. But it should be emphasized that although this initial placement is fast and objectively efficient (necessary to a program that traffics in numbers), it is not without built-in error. Therefore, during the first week of each semester, reading/study skills instructors engage in a crash program of diagnostic testing that involves group and individual testing devices. A student who has been misplaced in the system can, therefore, be transferred promptly to a course or level better designed to assist him, or he can be shifted to an instructor whose instructional bent, therapeutic specialty, or emotional threshold is more appropriate to the student's now more precisely diagnosed problems. Such an attempt to be efficient and humane may burden the Registration Office, but it does tend to elasticize what would otherwise be a rigid, Procrustean curriculum.

AUXILIARY COURSE SERVICES

In keeping with a position analogous to that of a clinician rather than that of a general practitioner, during the course of the semester the reading instructor makes use of auxiliary services to help the student in areas beyond the instructor's competence and/or energies. Besides the already described educational pre-registration services, the student can avail himself of "curb service" educational counseling throughout his academic stay. Further, in the Health Office we have a full-time health counselor who, for instance, can administer an audiometer test. In addition, students whose reading problems are complicated by psychological problems or weighty matters of vocational choice can be referred to a full-time counselor for help. About 3% of our students engage in such extended counseling. Inasmuch as a student's mathemagenic pattern may be disturbed by problems of housing, transportation, or part-time employment, he can be referred to various areas of the Student Personnel Department for help in these matters. Knowledgeable of these and other resources, the reading instructor can guide a student to services that relate to his efficiency and success in the academic establishment.

RESULTS

Previous *NRC Yearbooks* as well as other journals abound with pre- post-test gain statistics that establish progress enjoyed by students who have weathered a study skills program. The questionable relevance of these gain measures has been treated by Spache (6), McDonald and Byrne (4), and others. So none will be listed here, although our point-percentile gains on standardized tests are substantial. Nor can the findings of a Solomon four-way design study be presented, for the student-centered orientation of our system does not allow for such controls. It might, however, be reassuring to show that since the current program has been in operation, school-wide flunk rates have dropped from 10.09% to 5.77%, about a 45% shrinkage. But perhaps part of this improvement may be attributed to a campus-wide shift in instructor grading sentiments and other intangible variables. Certainly, on our campus and most others, the current unmeasurable dynamics of change tend to contaminate and distort statistical studies from which we could infer progress or dissolution.

Yet there are more pertinent statistics. Inasmuch as our program is designed primarily to improve the student's probability of success in other English courses and to the extent that success can be measured by a lower percentage of attrition, a diminishing flunk rate, and higher grades on the passing scale (D through A), we can report measurable progress.

(1) In 1966, a student testing in the lowest 16 percentiles faced a failure probability of 45% in English A. Presently, a student scoring on the same level but who first successfully completes English R "enjoys" only a 21% probability of failure. Even though these pre-treated low scorers do not experience the same success as the higher percentilers taking English A, the following percentage distribution comparison

indicates that their probability of success has increased and that their dropout rate is lower than that of other English A students.

Grade or Dropout	A	B	C	D	F	DO
Percentage Distribution for all English A's: N=1730	3%	19%	48%	19%	11%	32%
Distribution for R Student Who Advances to A: N=138	0%	10%	43%	26%	21%	22%

(2) 30% of the students receiving credit for English R improve enough to by-pass English A and enter English 1A, where their achievement, as compared to that of other English 1A students, is surprisingly high and their dropout rate is significantly low.

Grade or Dropout	A	B	C	D	F	DO
Percentage Distribution for all English 1A's: N=2550	7%	28%	45%	15%	5%	28%
Distribution for R Student Who Advances to 1A: N=54	4%	28%	44%	17%	7%	12%

(3) The rate of failure for a student who takes English A without exposure to English 2R is 11%. A student who completes English 2R before taking English A faces a 10% probability of failure in English A, not a great improvement. However, the fact that the pre-treated English A students experience less than half the percentage of dropout experienced by other English A students is significant and corroborates Weber's (7) findings and recommendations.

Grade or Dropout	A	B	C	D	F	DO
Percentage Distribution for all English A's: N=1730	3%	19%	48%	19%	11%	31%
Distribution for 2R Student Who Advances to A: N=103	1%	13%	57%	19%	10%	13%

(4) The grade *average* of students who complete English 2R before taking English 1A also provides favorable comparison. Again, the dropout rate for pre-treated English 1A students is much lower than that of their classmates who have not been exposed to English 2R.

Grade or Dropout	A	B	C	D	F	DO
Percentage Distribution for all English 1A's: N=2550	7%	28%	45%	15%	5%	28%
Distribution for 2R Student Who Advances to 1A: N=62	2%	32%	48%	16%	2%	6%

SUMMARY

When we consider that the student who is programmed into a reading/study skills course is an academic assigned risk, that in nearly every case his score on the placement test is low enough to assure a high probability of failure, and that this student, unaided, is likely to become a probation statistic if not a dropout, his grade predictability and perseverance in remedial and even transfer English courses now appear much healthier. The student scoring in the lowest 16 percentiles (local norms) who formerly had a 45% probability of failure in a remedial reading/composition course now has a failure probability of 21%. More encouraging is the fact that 30% of these low scorers are, after having successfully completed English R, able to circumvent the remedial reading/composition course and enter a transfer reading/composition class, where their performance is certainly respectable, if not quite so high as that of their higher-percentile classmates. Perhaps even more significant is the fact that reading/study skills courses seem to produce a very tenacious student who experiences only half the dropout rate of students who have not been exposed to the reading/study skills program.

If the name of the game is "pass," and the higher on the grade scale the better, then a systems approach and a humanized reading/study skills program facilitates this end.

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Comparisons of the Performance of Educationally Disadvantaged Adults and Elementary Children on Selected Measures of Reading Performance

David Knight and John D. Alcorn
University of Southern Mississippi

The necessity for teaching adults to read has brought about the development of materials, tests, and programs designed specifically for adults. While most standardized tests now available have been written or devised for children (2), there have been some attempts to develop tests which are adult oriented in both content and format (1). Various tests have been employed in adult literacy programs, but few correlations with other measures have been determined (3). Thus, there is a need to identify the salient operational characteristics of various tests used with subjects having distinctively different backgrounds and proficiencies.

THE PROBLEM

The purpose of this heuristic study was to investigate and compare the performance of a group of educationally disadvantaged adults and two groups of elementary school children on selected measures of reading achievement and intelligence. Specifically, answers to the following questions were sought:

(1) When comparisons are made between the performance of educationally disadvantaged adults and elementary school children on standardized tests designed specifically for use with elementary school children, what differences, of any, will occur?

(2) For these subject groups, what relationships exist among variables measured by the IPAT Culture-fair Test of Intelligence; between standardized reading tests including the California Reading Test, a graded word list for adults and the Adult Basic Learning Examination (Reading Sub-test), and the cloze test of comprehension?

PROCEDURES

In approaching this study it was first necessary to establish some basis for selecting elementary subjects whose reading performance could, to some extent, be compared with the reading performance of educationally disadvantaged adults. Recognizing the extreme difficulty in obtaining any type of meaningful match, the investigators chose (a) to establish the mean grade-level reading performance of the adult subjects with the California Reading Test, designed for use with elementary subjects and then (b) to select elementary subjects whose school grade placement corresponded with the mean reading grade level of adults.

Included in the battery of tests administered in this study were (a) the California Reading Test, designed for use with elementary pupils in grades H2-3-L4; (b) a graded word list for adults; (c) the Adult Basic Learning Examination (Reading Sub-test), designed to assess competence in basic reading skills of adults; (d) the IPAT Culture-fair Test of Intelligence; and (e) a sixty item cloze test of comprehension with five forms, constructed from materials written for disadvantaged adults and having a readability level of 3.0.

At the beginning of the 1967 school year, twenty-four enrollees in the Adult Education Program (Group I) of Hattiesburg, Mississippi, were administered the battery of tests just described. The grade-level reading performance scores obtained by the adults on the California Reading Test were used as a general reference point for roughly matching adult and elementary subjects. Two classes of elementary children at the third-grade level were selected as subjects. One group of elementary subjects included twenty-five children who came primarily from lower socio-economic level homes (Group II). The other group of elementary subjects included twenty-eight children who came from a moderate to high socio-economic level homes (Group III).

The degree of relationship among scores of the tests for each group was established through Pearson product moment correlations. Difference in mean performance on each of the test variables was tested for significance by t-tests.

FINDINGS AND CONCLUSIONS

When IPAT intelligence scores of the subject groups were compared in relation to reading performance scores, stronger relationships appear to exist in the performance of the elementary subjects than in the performance of the adults. As shown in Table 1, it was observed that the higher mean intelligence score for Group III, 112.1 as compared to Group II, 78.1, was accompanied by a mean reading performance that was approximately one grade placement level higher than for Group II on all measures. The mean cloze score for Group III was slightly more than double the mean score received by Group II.

TABLE 1

Group Means
Reading and Intelligence Measures

Groups I (N = 24)	California Reading Test			Able		Word List	Cloze	IPAT IQ
	Voc.	Comp.	Voc.	Reading	Spelling			
I N = 24	3.9	3.8	5.5	5.3	4.8	2.8	24.0	50.7
II N = 15	2.9	2.9	2.5	2.2	2.5	1.8	6.1	78.1
III N = 25	3.6	3.5	3.0	3.7	3.5	2.6	14.8	112.1

The mean IPAT IQ score 50.7 for the adults was much lower than either of the elementary groups; however, the adults performed as well as Group III and better than Group II on the California Reading Test and the graded word list. On the ABLE, the adults performed considerably better, attaining from one to three grade levels higher than either of the elementary groups; on the cloze, the adults were able to complete from two to three times as many cloze items as the elementary subjects.

The intercorrelations shown in Table 2-4 reveal a general trend toward more consistent and slightly higher correlations between IPAT intelligence and reading performance for the elementary groups as compared to the adult group. The highest correlations were found with Group III, which included the more capable elementary students. It was interesting to note that, for the adult group, the correlations between the IPAT and the cloze was .40 as compared to .63 and .65 for Group II and III. At the same time, as shown in Table 1, the performance of the adults was considerably higher than that of the elementary groups on the cloze.

Perhaps these findings should not be too surprising since the IPAT does not incorporate verbal materials; thus, performance on the IPAT might not be expected to correlate highly with reading performance. The IPAT has been designed as a culture-fair measure of "g" or general intelligence and, as such, would have been expected to show relationship to reading performance as a function of general intelligence. Given the lack of consistency between scores on the IPAT and the reading performance of adult subjects used in this study, the IPAT would not appear to have provided as adequate a reflection of intellectual abilities associated with reading among disadvantaged adults as other measures such as the cloze and the ABLE.

TABLE 2

Intercorrelations
Group I

	Calif. Voc.	Calif. Comp.	IPAT I.Q.	ABLE Voc.	ABLE Reading	ABLE Spelling	Cloze
Calif. Comp	.8138						
I.Q.	.4724	.6762					
ABLE Voc.	.4244	.5437	.4199				
ABLE Read.	.6584	.5378	.2669	-.0175			
ABLE Spell.	.5609	.2880	.1513	.2955	.3500		
Cloze	.5683	.3428	.3954	.3065	.3947	.5140	
ABES	.3790	.3436	.4482	.4418	.1405	.6142	.5840

TABLE 3

Intercorrelations
Group II

	Calif. Voc.	Calif. Comp.	IPAT I.Q.	ABLE Voc.	ABLE Reading	ABLE Spelling	Cloze
Calif. Comp.	.6511						
I.Q.	.2742	.4550					
ABLE Voc.	.4827	.3936	.7659				
ABLE Read.	.7075	.6757	.3829	.2904			
ABLE Spell.	.9480	.7225	.2513	.4016	.7563		
Cloze	.7866	.6885	.6291	.6806	.7279	.7320	
ABES	.8017	.6634	.2215	.1799	.9082	.8353	.6801

TABLE 4

Intercorrelations
Group III

	Calif. Voc.	Calif. Comp.	IPAT I.Q.	ABLE Voc.	ABLE Reading	ABLE Spelling	Cloze
Calif. Comp.	.8.76						
I.Q.	.5502	.6969					
ABLE Voc.	.5652	.6555	.7147				
ABLE Read.	.7577	.9123	.7572	.6650			
ABLE Spell.	.8064	.7107	.5331	.4275	.6910		
Cloze	.6423	.8181	.6521	.5170	.7177	.6593	
ABES	.7771	.7094	.6006	.5030	.7413	.8953	.5332

In scoring the cloze, the replacement of the original word counted as a correct response. Table 5 presents the mean cloze scores, the percentage of incomplete cloze items, and the average number of different responses per item for each group. Although subjects in Group I had the highest mean score with twenty-four correct responses, they had a higher percentage of incomplete items with 23% left blank than did Group III with 9.6% left blank. Group II left 61% of the cloze items blank.

Taking into account the variation in responses to each cloze item, Group I appeared to be most proficient. They obtained higher cloze scores with fewer responses attempted than did either of the two elementary groups. The percentage of incomplete items and the average number of different responses attempted may provide an indication as to the language required to complete the cloze passage. The difference in performance between Group I and Group II suggests the interaction of an experiential variable which may have allowed educationally disadvantaged adults to acquire a functional understanding of language not yet afforded elementary children who come from more disadvantaged backgrounds.

TABLE 5

Response to Cloze Items

Group	Mean cloze scores	Percent left blank	Average number of different responses per blank
I	24.0	33%	2.3
II	6.1	61%	1.2
III	14.8	9%	3.8

It is noted that Group III left fewer items incomplete but used a greater variety of words in completing the cloze items. Group III seemed to possess a greater vocabulary range than either Group I or Group II but with less understanding of the concepts involved than Group I.

The difference between the performance of adults and elementary school children on the ABLE and cloze tests suggests that the format and content of instruments to be used with adults are important factors. Since both of these instruments were oriented more closely to the interests and experiences of adults, they apparently allowed the adults to indicate more fully their understanding of the test material.

The difference between the performance of the adult group and the elementary group on the cloze, a test which in a sense measures a type of functional comprehension, suggests that educationally disadvantaged adults understand and are able to utilize the limited reading skills they do possess to a greater extent than might be indicated with standardized tests, especially those not devised for adults.

It seems evident that extreme caution must be used in interpreting performance of disadvantaged adults on standardized tests. These adults appear to have developed functional understandings of the formation and retention of concepts and problem solving strategies not easily measured by standardized procedures.

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The College Reading Improvement Programs Of Georgia: 1969-70

A. J. Lowe and D. W. Stefurak*
University of South Florida

INTRODUCTION

In the past forty years, there have been over sixty surveys made regarding the content and/or extent of college reading improvement programs (CRIP) in the United States (2). This study consisted of a mailed survey which attempted to determine the extent and content of the CRIP's existing in Georgia in the Fall of 1969. The study was patterned after those of Lowe (1 3), Thurston, Lowe, and Hayden (4) and those reviewed by Lowe (2).

As of September, 1969, there were fifty-eight institutions of higher learning in Georgia. These schools included universities, colleges, junior colleges, community colleges, branches of colleges, and special schools such as engineering, religious service, and law schools not adjacent to parent schools. As of the cut-off date, 11-26-69, thirty (or 52 percent) of the schools replied to the survey while twenty-eight (or 48 percent) did not. Of the thirty replying, twenty-one (or 67 percent) had a CRIP while nine (or 33 percent) did not. The findings of the study which follow are based on thirty usable questionnaires.

SCHOOLS NOT OFFERING CRIP'S

The nine schools not offering CRIP to their students returned a usable questionnaire, and of these, four asked a total of twelve questions concerning the implementation of a CRIP:

How to get financial aid for CRIP
. . . professional assistance to set up a CRIP
What is cost involved to set-up CRIP?
Comparative success of various CRIPS
Admission criteria for CRIP
What are staff needs?
What do surveys of CRIPS show?
What are pitfalls to avoid?
How do you go about starting a CRIP?
What are some economical and efficient CRIPS?
Should credit be given?
Has anyone employed contingency management effectively?
(These questions were answered by the writer at the Conference)

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* With the assistance of Barbara Schnabel, Luellen Garrett, and Roberta Newman.

Of the nine schools that stated they desired having a CRIP, six schools were not planning to commence a CRIP in the near future. Three schools had offered programs at one time and the reasons given for discontinuance of the programs were

1. Too expensive to operate
2. Teacher left
3. Mostly study skills—no credit—faculty became disinterested

SCHOOLS OFFERING CRIPS

Of the twenty-one schools offering a CRIP, fourteen asked twenty-six questions concerning the starting and improving of a CRIP:

1.	How should program be organized?	(2)
2.	What should be taught?	(1)
3.	What tests should be used?	(2)
4.	What results do other teachers get?	(1)
5.	What motivation techniques are useful?	(2)
6.	Should the course be credit or non-credit? (draft status)	(3)
7.	What students should be enrolled in a developmental reading course?	(2)
8.	What instruments are desirable?	(1)
9.	What is the best way to teach functional illiterates to read?	(1)
10.	An evaluation of available hardware.	(1)
11.	How are skills acquired transferred to academic courses?	(1)
12.	May study skills be taught first?	(1)
13.	How can large numbers of students be handled on an individual basis?	(2)
14.	What are some screening techniques?	(1)
15.	Discuss grading and evaluation of students	(1)
16.	Is there Federal aid for community college reading centers?	(1)
17.	How do you interest students in a CRIP?	(2)
18.	What is the best approach to use . . . with a limited staff, materials and 125 students?	(1)

YEAR CRIP WAS STARTED

Year	Number of Schools
1969	4
1968	3
1967	2
1966	2
1965	1
1964	2

1963		1
1962		1
1957		1
1951		1
1947		2
1944		1
Median year, 1966	TOTAL	21

DEPARTMENT OR DIVISION CONTROLLING OR SPONSORING CRIP

Department	Number of Programs
English (Humanities)	9
Education	7
Guided/Directed Studies	1
Reading	1
Dean	1
Private Firm	1
Social Science	1
TOTAL	20

Academic credit was given by eight schools. The departments awarding credit are listed below:

Department	Number of Programs
English (Humanities)	4
Guided and Directed Studies	1
Reading	1
Education	1
Social Science	1
TOTAL	8

There were fifteen programs for which a fee was charged. The costs are given below:

Cost	Number of Programs
$115.00 (private firm)	1
Regular (semester) (quarter) hour fee	2
No fee	11
$100.00	3
$ 40.00	1
$ 10.00	1
materials only	1
no response	1
TOTAL	22

The next three questions dealt with the length of class sessions, number of class meetings a week, and the duration of the program. The data reported are for twenty-one schools and are given below:

Class Length	Meetings Per Week	Duration of Program	Number of Schools
1 hour	5	Sem./Tri./Qtr.	5
1 hour	4	Sem./Tri./Qtr.	4
1 hour	3	Sem./Tri./Qtr.	6
1 hour	2	Sem./Tri./Qtr.	1
1½ hours	2	Sem./Tri./Qtr.	1
1 hour	2 or 3	10 weeks	3
1 hour	5	4 weeks	1
		TOTAL	21

The number of full and part-time instructors was as follows:

			Number of Instructors	
Full Time	Part Time	Number of Programs	Full Time	Part Time
4	1	1	4	1
4	0	1	4	0
2	0	2	4	0
2	0	1	2	0
1	2	1	1	2
1	1	1	1	1
1	0	7	7	0
0	2	1	0	2
0	1	6	0	6
		21	23	12

The number of students involved in the various CRIP's for Fall, 1969 were:

Number of Students (approx.)	Number of Schools
no data	3
300	1
250	1
195	1
150	1
125	2
101	2
100	1
90	1
77	1
70	1
62	2
50	1
40	1
27	1
25	1
TOTAL 1562	21

The next question concerned materials used in the programs and specific brand names where possible. The results were as given below for twenty-one schools:

Material Used	Different Types	Number of Programs
Pacers	5	16
Tachistoscopes	11	16
Reading Films	8	17
Workbooks	26	21
Reading Tests	11	13
Other Tests	28	18
Other Materials	37	16

The listings which follow name the specific materials used and the number of programs using them:

Pacer	Number of Programs
SRA Accelerators	6
EDL Skimmer	4
AVR Rateometer	6
LIC Shadowscope	7
Accelerators (not named)	1

Tachistoscopes	Number of Programs
EDL Tach X	5
EDL Flash X	6
PDL Perceptoscope	3
AVR Eye Span	2
Keystone Flashmeter	1
Speed 'O Scope	1
Viewlex	1
Lafayette Tachistoscope (Psychotechnics)	1

Reading Tests	Number of Programs
Diagnostic Reading Tests (Triggs)	2
Nelson-Denny Reading Test	9
David Reading Test	1
Gates Reading Survey	1
Iowa Silent Reading Tests	3
Co-op English Test	1
Botel	1
Kelley-Greer	1
Minneapolis Reading Tests	1
SRA Diagnostic Reading Tests	1
California Reading Test	2

Other Types of Tests	Number of Programs
Audiometer	3
Keystone Visual Survey	3
Sequential Tests of Educational Programs (STEP)	1
Van Wagenen Analytical Reading Scale	2
Michigan Vocabulary Test	1

The workbooks and other materials used in the programs were quite varied, as was expected. The list which follows contains names and/or titles of the materials and the number of programs using them:

Workbooks/Materials	Number of Programs
SRA Reading Labs	5
SRA Reading for Understanding	2
Reader's Digest Skill Builders	1
Language Master	1
Periodicals and Magazines	1
Better Reading Books (Simpson)	1
Read With Speed and Precision (Leedy)	2
Efficient Reading (Brown)	2
Read Better and Faster (Lewis)	1
Reading-Study (Strang)	1

Many of the respondents gave additional information about their programs (1). Of note was the comment of some instructors as to the individualized nature of their program. Twenty-one schools having programs returned usable questionnaires.

SUMMARY AND DISCUSSION OF FINDINGS

The fact that at least thirty percent of the institutions of higher learning of the State of Georgia reported having some type of CRIP shows that students still evidently ask for and/or need help in reading college materials. This finding would seem to show an interest in student welfare on the part of the administration, staff, and teaching personnel. Of the nine schools not currently offering a program, six desired having one. Another positive note was the finding that all schools except one having a CRIP controlled it themselves. The questions asked by CRIP and no CRIP schools were intelligent and timely. Almost half the CRIP schools started their programs in 1966 or later, and conversely the other half had programs started during 1944 to 1966. English and Education Departments controlled about two-thirds of the CRIPS. Nearly one-half of the programs gave academic credit with English Departments leading. The listing of the cost to the student for programs showed the usual fees being charged. The predominant type of program met three to five times a week for a term's duration. There were 23 full-time and 12 part-time instructors involved in the twenty-one programs for which data were available. There were approximately 1,949 students in the Fall, 1969, programs of twenty-one schools. Most of the programs used some type of mechanical aids, and these machines were used with some type of grouping arrangements. Many programs used pacers and controlled readers individually; controlled readers, reading films, and tachistoscopes were used in almost all the programs. Workbooks and other materials were used by most programs. The "lab" or "boxed" materials seemed to be quite popular. There were many different reading and other tests used by the respondents.

As in the past, the respondents to the survey were most cooperative. Our thanks is due them for taking the time to complete and return the questionnaire.

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A Theoretical Model of the Teaching-Learning Factors Believed to be Interacting in the Development of Reading Comprehension*

Anthony V. Manzo
University of Missouri—Kansas City

This paper is presented as a heuristic statement. It is an attempt to describe as a quasi-static learning model the interaction of factors believed to be involved in the development of reading comprehension ability (to the extent that meaning can be derived from convergent thinking).

TYPE OF MODEL

Models have two basic uses. One is to describe theories representing guesses about the connections between variables. The second is to represent isomorphic theories; i.e., theories which demonstrate that certain systems have paralleled laws, structures and/or operations (Brodbeck, 1963). In this second use there is the possibility of paralleling observed phenomenon with the tautologies of mathematics. The model proposed below is a combination of both usages. It is, as stated above, a statement of belief regarding the interaction of factors bearing on reading comprehension and to a significantly lesser extent an attempt to draft these beliefs in mathematical terms.

Attempting to formulate a theoretical statement of learning in mathematical terms is always a difficult prospect. However, if such a model proved to be researchable it could be used as a means for observing behavior; i.e., as a 'dynamic' system for analyzing learning conditions and thereby offering clues for intervention.

KEY TO ELEMENTS IN THE MODEL

$Rc^{1\ LL}$ Reading comprehension as an extension of general language learning.

Tc The intellectual and critical thinking ability of the teacher (or programmed teaching device).

Ms The power of the teacher (or programmed teaching device to model or to conjure for students models of the desired behaviors.

fb The ability of a teacher and/or model to provide frequent and effective feedback to the learner regarding the appropriateness of his responses.

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$Pi^{1 \ldots x}$ Predisposing factors: The infinite number of affective and cognitive factors which establish the student's disposition relative to the learning task and content; most notably level of aspiration expectancy of success, socio-economic background, cognitive style, range of information, intelligence, vocabulary.

Prc Prior rate of comprehension learning: (also a predisposing factor)—the student's prior success with the learning task at hand.

Ds Decoding skill: Ability to decode symbols into recognizable words.

Er Environment: The conduciveness or reinforcing nature of the learning environment.

T Time: The distribution and length of instructional periods.

I Intensity: The mass or concentrated power of interaction.

Tk Task: The power of the particular learning activity or task to command and develop the appropriate mental abilities.

Cs Content or substantive: The appropriateness of the textual material: i.e., the extent to which it can activate and maintain the learner's attention and will.

$$Rc^{1\,LL.} = \left[\left[\left[\frac{(Tc \,.\, Ms)^{n} \quad (Tk \,.\, Cs)}{1/DS} Pi_{1 \ldots x} \,.\, Prc \right] Er \right] f(T) \right] f(I)$$

DESCRIPTION OF LEARNING MODEL

The basic assumption underlying this model is that the product reading comprehension ($Rc^{1/LL.}$), is an extension of language learning. The major implication of this assumption is that the development of reading comprehension is subject to many of the same factors and complexities as is the development of language.

There are five basic components to this model: 1) the power of the teacher, (or programmed teaching device); 2) the power of the learner; 3) the effect of the learning environment; 4) the nature of the task and content; and 5) the influence of time and intensity.

Structurally, the model resembles Chinese boxes, the basic components fitting one inside another with the bracketed effect of each acting upon the previous product. Taken as individual factors, this model says that the power of the teacher (or programmed teaching device) is a function of the critical thinking ability of the teacher (Tc), multiplied by the teacher's power to elicit imitation (Ms) in the student of his "model" behavior. The "model" behavior may also be represented by some paradigm which has been offered as exemplary. The impact of this teaching unit (Tc.Ms) is believed to be exponentially powered by the skill of the teacher (or program) to provide frequent and effective feedback (fb) to the learner. This value $(Tc.Ms)^{fb}$ is then influenced in multiple fashion by the product of the multiplication of the task (Tk) being performed and by the content (Cs) serving as the substantive for the interaction: $(Tc.Ms)^{fb}$ $(Cs.Tk)$.

The product of this component is expected to have its impact determined by the multiplication of two exponents, one representing an infinite number of affective and cognitive factors ($Pi_{1\ldots x}$) and the other indicating the student's prior rate of success in reading comprehension learning (Prc).

This larger component is believed to be significantly influenced by the degree of decoding (Ds) of the reader. The obvious reason for this phenomenon is that reading comprehension can be achieved only to the extent that the symbols can be decoded. This is to say, that decoding skill is only a factor to the extent that it is less than optimal. In other words, it is not possible to exert more than optimal power to decode a single word. Therefore, decoding skill is represented as a fractional denominator (1/Ds) of the component

$$\left[\left[\frac{(Tc.Ms)^{fb} \qquad (Tk.Cs)}{1/Ds} \right] Pi_{1\ldots x} \;.Prc. \right]$$

in this way it is shown that this skill, in optimal power, i.e., expressed as one, can be divided into one, yielding one as the dividend and thereby leaving the larger enumerator unchanged.

By bracketing this yet larger component,

$$\left[\frac{(Tc.Ms)^{fb} \qquad (Tk.Cs)\, Pi_{1\ldots x} \;.Prc}{1/Ds} \right]$$

it is possible to show that this product is believed to be affected in a multiple way by the learning environment (Er).

Finally, this entire component is thought to be affected by some function of time f(T)—distributed vs. mass—which ultimately is affected by some function of intensity f(I) or concentrated impact.

From this combination of interacting factors, reading comprehension is believed to progress.

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The Effect of Auditory, Supraliminal and Written Reinforcement of Words Presented by I.T.V. on the Vocabulary Development of Seventh and Eighth Grade Pupils

Thomas F. McDonald
Western Washington State College

One of the prerequisites for effective reading is a knowledge of a wide variety of words. Teachers and researchers alike agree that vocabulary development is important to individuals at every level of schooling. But the process of building vocabulary still remains a perplexing problem due to the various theories about the nature of language and the definition and the role of words.

With the recent addition in education of closed circuit television systems used in a variety of ways for instructional improvement, questions have been raised regarding the use of this media to develop vocabulary ability. This paper reports an experimental study which combined I.T.V. with supraliminal and written word reinforcement to determine the effect on the vocabulary skills of seventh and eighth grade pupils.

LIMITATION OF THE PROBLEM

The experiment was designed to reveal differences in vocabulary achievement by exposure of seventh and eighth grade pupils to one of four treatment groups:

1. Fifteen words that were developed through auditory reinforcement alone. In this treatment, the teacher presented a word, a one-word synonym, and (for one minute) spoke about the uses of the word in context. Therefore, auditory reinforcement is nothing more than the teacher talking about the word for one minute via I.T.V.
2. Fifteen words that were developed through auditory and supraliminal reinforcement.

   In treatment two, besides the one-minute teacher talk about the word in context, on the bottom third of the television screen, the word and its one-word meaning were flashed every five seconds. The flashed response was at 1/10 second with a shutter opening of F 1.7. Based on a study by Skinner, (*4*), the research by Ryan and Muehl (*3*) on perceptual recognition, and an investigation of the role of the perceptual characteristics of a stimulus by Asch, Ceraso, and Heimer (*1*), this speed was considered to be supraliminal stimulation, i.e., stimulation that is just above perceptual threshold.

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3. Fifteen words that were developed through auditory, supraliminal and written reinforcement.
   In treatment three, besides auditory and supraliminal stimulation, the pupils encircled the one-word synonym given for the stimulus word on a dittoed paper that contained four other distractors. These papers were collected at the end of the experiment before the post-test was administered.
4. Fifteen words that were developed through auditory and written reinforcement.
   In treatment four, the pupils were exposed to auditory reinforcement and written reinforcement. No supraliminal reinforcement was given to them.

FOUR HYPOTHESES CONSIDERED

The experiment was designed to determine whether pupils could learn vocabulary words more effectively due to an auditory, written or supraliminal reinforcement immediately after each word was presented via closed circuit television. Four null hypotheses were tested. The first hypothesis was concerned with the four treatments; the second compared seventh graders with eighth graders in performance; the third compared male and female participants; and the fourth compared intelligence with performance.

THE SAMPLE

Fifteen seventh graders and fifteen eighth graders enrolled at Isaac Junior High School in Phoenix, Arizona during the 1968-69 school year were chosen. Class sizes used in the study ranged from twenty-three to thirty-eight pupils. Of the 30 classes, 12 seventh- and 12 eighth-grade classes were randomly selected and randomly assigned to one of the four treatment groups. The study was limited to an investigation of vocabulary growth based upon the fifty-item vocabulary test taken from the Gates-MacGinitie Reading Test, 1965, Survey E. The fifteen vocabulary words most frequently missed on the pretest were reinforced in the four treatment groups. The treatment procedure was limited to one video-taped presentation which lasted 22 minutes that was given to each of the four treatment groups simultaneously.

DESIGN AND POPULATION OF THE STUDY

The design of the study was the non-equivalent control group design discussed by Campbell and Stanley (2). The research procedures involved a four-way analysis of covariance with three-paired factors (treatment and grade level, treatment and sex, and treatment and mental ability) used to test the four null hypotheses. The California Test of Mental Maturity, 1963, S-Form, provided IQ scores which were used as a co-variate to control differences in scholastic aptitude. In this study, the post-treatment vocabulary scores were considered the criterion measures and the California Test of Mental Maturity and pre-treatment vocabulary scores were considered the covariates. From a population of 1,037 seventh-and eighth-grade pupils, a sample of 462 pupils was selected. The number 462 was arrived at by using only those students for whom complete data existed. Classification of the 462 subjects by treatment, grade level, sex, and ability level is shown in Table 1. Since there were four cells composed of a minimum of five subjects, all other cells were reduced to five by random selection to meet the requirements of equal cell size for the analysis of covariance. Thus, the statistical results were based on 240 pupils. There were sixty subjects in each treatment group, 120 seventh-grade subjects and 120 eighth-grade subjects; 120 male and 120 female subjects; and 80 high ability, 80 medium ability, and 80 low ability subjects.

TABLE 1

Actual Number of Subjects in Each Subpopulation of the Population of 462 Subjects When Classified By Treatment, Grade Level, Sex, and Ability

Sex and Ability Level	1		2		3		4	
	7	8	7	8	7	8	7	8
Male								
High	10	9	11	7	12	7	9	7
Medium	12	10	12	8	14	11	7	10
Low	8	16	12	8	5	10	9	9
Female								
High	7	13	7	7	10	12	8	5
Medium	9	11	10	6	19	5	15	13
Low	6	14	12	8	10	5	10	7

SUMMARY OF FINDINGS

Summary of analysis of covariance of post-treatment scores on the fifteen vocabulary words is presented in Table 2. The results indicated significant differences between treatment groups and between sexes. Because there were four treatment groups, the groups were compared two at a time in order to isolate the differences. The F ratios were not computed for second order interactions but [illegible] assigned to error variance to eliminate the chance that a particular teacher, room or event could account for the change in post-treatment measures other than the treatment.

TABLE 2

Summary of Analysis of Covariance of Post-Treatment Scores on the Fifteen Word Vocabulary

Source of Variation	Degrees of Freedom	Sums of Squares	Mean Squares	F
1 – Treatment	3	196.94	65.64	2.67*
2 – Grade Level	1	3.26	3.26	0.13
3 – Sex	1	340.20	340.20	13.82**
4 – Ability Level	2	0.56	0.28	0.01
12	3	101.48	33.82	1.37
13	3	73.13	24.37	0.99
14	6	192.59	32.09	1.30
23	1	2.23	2.23	0.09
24	2	36.77	18.38	0.75
34	2	5.75	2.87	0.12
123	3	11.58	3.86	
124	6	87.17	14.52	
134	6	151.54	25.25	
234	2	62.18	31.09	
1234	6	121.58	20.26	
Within	190	4,809.27	25.31	

*$p < 0.05$.
**$p < 0.01$.

Table 3 presents the four significant differences between the adjusted mean post-treatment scores. In each case post-treatment scores were adjusted for differences with pre-treatment scores on vocabulary and IQ. The groups exposed to auditory and supraliminal reinforcement (treatment two); auditory supraliminal, and written reinforcement (treatment three); and auditory and written reinforcement (treatment four) scored significantly greater at the 0.01 level than the group exposed only to auditory reinforcement (treatment one). In addition, the group exposed to auditory and written reinforcement (treatment four) scored significantly higher than the group exposed to auditory and supraliminal reinforcement (treatment two). On the other hand, there was no significant difference between the group exposed to auditory and supraliminal reinforcement (treatment two) and the group exposed to auditory, supraliminal and written reinforcement (treatment three). Also, there was no significant difference between the group exposed to auditory, supraliminal and written reinforcement (treatment three) and the group exposed to auditory and written reinforcement (treatment four). With regard to the other hypotheses, female pupils scored significantly higher than male on the fifteen-word vocabulary. There were no differences attributed to grade level or to ability level.

TABLE 3

Mean Pre-Treatment, Post-Treatment, and Adjusted Post-Treatment Scores On the Fifteen Word Vocabulary for Treatment Groups Combinations

Group	Pre-treatment Voc.	IQ	Post-treatment	Adjusted Post-treatment
One (Auditory Word Reinforcement)	2.20	99.12	5.27	5.25
Two (Auditory and Supraliminal Word Reinforcement)	2.03	99.42	6.87	6.89
One (Auditory Word Reinforcement)	2.20	99.12	5.27	5.35
Three (Auditory, Supraliminal, and Written Word Reinforcement	2.25	100.15	8.03	7.95
One (Auditory Word Reinforcement)	2.20	99.12	5.27	5.39
Four (Auditory and Written Word Reinforcement)	2.55	9.50	8.80	8.68
Two (Auditory and Supraliminal Word Reinforcement)	2.03	99.42	6.87	7.02
Four (Auditory and Written Word Reinforcement)	2.55	99.50	8.80	8.65

CONCLUSIONS AND RECOMMENDATIONS

The study demonstrated that several reinforcement techniques facilitate vocabulary development. It showed that increased emphasis should be placed on the use of reinforcement techniques beyond just teacher talk (auditory reinforcement) when seventh and eighth grades are given difficult vocabulary words via I.T.V. This study demonstrated that written reinforcement added to teacher talk helps seventh- and eighth-grade pupils make greater gain with very difficult vocabulary words than if supraliminal reinforcement is added to teacher talk. The addition of supraliminal reinforcement to teacher talk is as good a technique with this population as the addition of supraliminal and written reinforcement when dealing with very difficult vocabulary words. When used in combination with written reinforcement and teacher talk, the use of supraliminal reinforcement did not enhance the vocabulary development of the pupils in the study. Female participants in the study showed greater vocabulary improvement than male participants regardless of grade level and the type of vocabulary development used. This may suggest that male pupils should be given additional help in vocabulary building in the seventh and eighth grades.

This experiment explores the uses of closed circuit television, reinforcement procedures and vocabulary development. The use of supraliminal stimulation as a technique to reinforce vocabulary words proved very exciting. Further refinement regarding the actual experimental arrangement of the pupil's position in the classroom (closer to or farther away from the closed circuit television screen) needs to be considered if this experiment is replicated. An additional instrument of measurement beyond the standarized reading test should be added to determine the pupils' abilities to verbalize very difficult words that were reinforced via the television medium. This initial experiment is one of many that should be initiated with I.T.V. and vocabulary reinforcement techniques.

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How to Succeed in Reading by Really Trying

Wayne Otto and Kenneth L. Dulin
University of Wisconsin

According to the sociologists, status is a commodity—a currency as real as any other, and as important in the evaluation of many occupational choices as are salaries, retirement plans, or paid vacations. In choosing a professional position, they say, the person who wants to "get ahead" in his field must weigh this factor as carefully as any other. Status, like any other currency, draws more of itself as "interest." Status-bearing opportunities accrue to those with previous status, and there is a "snow-balling" effect: the highly-statused get more status, and the less-statused get nothing. In the quest for status, some positions provide a useful vehicle; others provide a vehicle that merely spins its wheels.

Or, at least, so the story goes. If it is true—and to some extent we think it is—then professional work in reading is unlikely to be an exception. "Pecking-Orders"—implicit but real—probably do exist within our profession as within others, and certain professional roles probably do carry more prestige than others.

But status, like beauty, is in the eye of the beholder. A high-status activity to one person may appear to another to be a blatantly bothersome chore. To one professional the tedious job of collecting and analyzing data may be boring and trivial, while to another it places him at "the cutting-edge of knowledge." Counseling beginning teachers may seem to one person the epitome of teaching—"passing on the torch"—while to others it may be the price to be paid for some later free time to do research. Opinions vary, but the indisputable fact is that the "publish or perish" policies of many major universities are in sharp contrast to the "teach and train" emphasis of others.

We did this study in order to examine a limited portion of the problem—to see how members of the National Reading Conference felt about it. Another group might feel quite different; but this is how it is with the NRC.

METHOD

Instrument. A questionnaire was constructed wherein respondents were asked to rank-order sixteen different specific activities a professional worker in reading might conceivably pursue and practice. After ranking these activities, the respondents were then asked to identify their own professional settings, roles, responsibilities, and major interests.

Sample. The questionnaire was submitted by mail to the entire active membership of the National Reading Conference. No names were required of respondents, and a stamped envelope was enclosed for the return.

Of the 237 persons polled, 75 responded. After partial, incomplete, and/or incorrectly handled responses were discarded, 67 usable responses remained. Thus data from more than one-fourth of the NRC membership was the basis for the analyses reported here.

Data Analyses. Categories of respondents were set up in several ways, and analyses were made for each pairing of sub-groups and for the total sample.

The first two categories identified were a "large university" group and "others," with the latter group including people associated with public schools, private reading clinics, small colleges, and commercial firms. Next, the data were re-pooled and those who gave "research" as one of their major interests were separated from a "no research" group. Finally (and again from the total data-pool), a "teacher preparation" group and a "reading services" group were identified.

In order to compute means, medians, and variances for the various sets of rankings, it was necessary to treat them as if they were interval, rather than ordinal, numbers. Though theoretically fallacious, this practice is conceded by Guilford (1, p. 246) to be common in such instances. To examine response consistency within and between sub-groups and the total sample, Kendall's Coefficient (W) and Spearman's Rank-Order Correlation Coefficient (Rho) were used.

RESULTS AND DISCUSSION

Total Sample. The data in Table 1 appear to be generally in line with the "publish-or-perish" mystique: reporting research findings in journals, writing professional books on reading, and assuming leadership roles in national-level professional organizations for workers in reading evidently carry considerably more status with NRC members than do supervision and/or administration of reading programs and services, pre-service teacher preparation, or state-level involvement with professional organizations. The editorship of collected readings, however, was rated much lower than the authorship of journal articles and books. Prestige apparently accrues most heavily to those who write their own material. It seems reasonable to conclude that he who publishes shall not perish but have everlasting status among his peers—so long as he does his own things.

Sub-groups. When "large university" people were compared to "others," the only notable disparity indicated was in terms of their perceptions of presenting papers at national conventions; though close in terms of absolute mean-rankings, this activity placed fifteenth for "others" and seventh for "large university" people. This finding may be not unrelated to the relative amounts of travel support available to permit such activities. Perhaps the "large university" people like it

TABLE 1

Average Status-Rankings of Professional Activities By All NRC Members Responding

Professional Activities	Total Group N = 67		
	Mean Ranking	S.D.	Median Ranking
Authorship of Journal Articles: Theory and Research	4.28	4.2	2.44
Authorship of Methods Texts	5.46	3.9	5.08
Preparation of Commercially-Produced, Nationally-Distributed Teaching Materials	6.32	4.3	5.40
Leadership Positions in National-Level Reading Organizations	6.39	4.7	4.98
Authorship of Journal Articles: Opinion, Discussion, Review	6.80	3.84	6.36
Preparation of Commercially-Prepared, Nationally-Distributed Testing Materials	7.58	3.9	7.21
Editorial Work with Major Journals in Reading	8.05	3.3	9.33
Professorships in Reading: Graduate-Level and Research	8.10	1.3	8.00
Presentation of Papers at National Reading Conventions	8.53	3.5	8.64
Authorship of Journal Articles: Books Reviews and Critiques	8.56	4.6	9.21
Professorships in Reading: Pre-Service Teacher-Preparation and Supervision	9.38	3.7	10.25
Supervision and/or Administration of Reading Program sand Services: Colleges or Universities	9.39	4.1	10.38
Leadership Positions in State-Level Reading Organizations	10.34	4.5	11.00
Editorship of Collections of Readings	10.62	2.0	10.44
Supervision and/or Administration of Reading Programs and Services: Public School Districts	11.54	4.7	13.88
Supervision and/or Administration of Reading Programs and Services: Private Schools and Agencies	12.98	4.0	11.93
Coefficient of Concordance	.22345*		

* $p < .001$

because they have it. All of the comparisons of "large university" and "others" rankings are given in Table 2.

The rankings of the "research" and "no research" groups are given in Table 3. Here, national-level organizational leadership and the administration and/or supervision of reading services and programs at the college or university levels were the only activities perceived very differently. The former placed fifth with "research" people over twelfth

TABLE 2

Average Status-Rankings of Professional Activities By "Large University" People and "Others"

Professional Activities	"Large University" Group N = 31			"Others" Group N = 36		
	Mean Ranking	S.D.	Median Ranking	Mean Ranking	S.D.	Median Ranking
Authorship of Journal Articles: Theory and Research	3.17	3.5	0.83	5.28	4.4	3.00
Authorship of Methods Texts	5.52	3.9	5.00	5.41	4.0	4.67
Preparation of Commercially-Produced, Nationally-Distributed Teaching Materials	5.69	4.1	4.67	6.93	4.4	6.00
Leadership Positions in National-Level Organizations in Reading	5.89	4.2	4.17	6.84	4.6	6.67
Authorship of Journal Articles: Opinion, Discussion, Review	6.31	3.5	6.00	7.26	4.1	7.13
Preparation of Commercially-Produced, Nationally-Distributed Testing Materials	7.03	3.6	6.33	8.10	4.1	7.00
Presentation of Papers at National Reading Conventions	7.31	3.2	7.67	9.75	3.2	9.80
Authorship of Journal Articles: Book Reviews and Critiques	8.21	4.1	8.00	9.37	4.2	9.00
Professorships in Reading: Graduate-Level and Research	8.21	3.6	9.00	8.00	4.9	7.50
Editorial Work with Major Journals in Reading	8.41	3.2	8.33	7.71	3.4	8.69
Editorship of collections of Readings	9.93	3.2	11.21	9.69	3.9	10.30
Supervision and/or Administration of Reading Programs and Services: College or University	10.07	4.0	11.5	8.72	4.2	9.25
Professorships in Reading: Pre-service Teacher-preparation and Supervision	10.51	3.0	11.17	8.30	4.2	8.50
Leadership Positions in State-Level Reading Organizations	11.83	3.3	12.88	8.93	5.0	8.67
Supervision and/or Administration of Reading Programs and Services: Public School Districts	13.51	3.2	15.00	9.74	5.1	10.75
Supervision and/or Administration of Reading Programs and Services: Private Schools and Agencies	14.50	3.2	14.95	12.23	3.6	14.78
Coefficients of Concordance	.39368*			.13924*		

* $p < .001$

TABLE 3
Average Status-Rankings of Professional Activities By "Research" People and "No Research" People

Professional Activities	"Research" Group N = 19			"No Research" Group N = 47		
	Mean Ranking	S.D.	Median Ranking	Mean Ranking	S.D.	Median Ranking
Authorship of Journal Articles: Theory and Research	3.53	3.3	2.25	4.41	4.4	2.42
Preparation of Commercially-Produced, Nationally-Distributed Teaching Materials	5.32	3.0	5.00	6.70	4.7	5.00
Authorship of Methods Texts	6.37	4.3	5.25	4.83	3.5	4.75
Preparation of Commercially-Produced, Nationally Distributed Testing Materials	6.63	6.3	7.00	7.82	4.0	6.33
Leadership Positions in National-Level Reading Organizations	6.74	4.6	5.25	9.37	4.4	4.30
Authorship of Journal Articles: Opinion, Discussion, Review	7.00	3.6	9.75	6.60	3.9	5.83
Editorial Work with Major Journals in Reading	7.63	2.5	7.00	8.43	3.5	8.75
Presentation of Papers at National Reading Conventions	7.92	3.5	6.75	9.21	3.3	9.17
Professorships in Reading: Graduate-Level and Research	8.16	3.7	8.00	8.13	4.6	8.00
Authorship of Journal Articles: Book Reviews, and Critiques	8.84	4.5	9.13	8.67	4.1	13.75
Editorship of Collections of Readings	9.47	3.0	8.13	9.83	3.0	9.83
Professorships in Reading: Pre-service Teacher Training and Supervision	10.21	3.6	11.33	9.08	3.68	9.00
Supervision and/or Administration of Reading Programs and Services: College or University	10.95	4.1	12.63	8.65	4.0	[illegible].75
Leadership Positions in State-Level Reading Organizations	11.79	3.6	12.63	9.68	4.7	9.68
Supervision and/or Administration of Reading Programs and Services: School District	12.32	5.3	14.92	11.23	4.4	11.00
Supervision and/or Administration of Reading Programs and Services: Private Schools and Agencies	13.58	4.0	15.14	12.81	4.0	15.37
Coefficients of Concordance	.32738*			.21521*		

* $p < .001$

for the "no research" group, and the latter placed thirteenth for "research" people as opposed to eighth for the "no research" group. Again, the difference in absolute mean-rankings is not great.

Finally, the rankings of "teacher preparation" people and "reading services" people were compared. The data are summarized in Table 4. No major differences are apparent.

TABLE 4

Average Status-Rankings of Professional Activities By "Teacher Preparation" People and "Reading Services" People

	"Teacher Preparation" N = 37			"Reading Services" N = 38		
	Mean Ranking	S.D.	Median Ranking	Mean Ranking	S.D.	Median Ranking
Authorship of Journal Articles: Theory and Research	4.09	4.2	2.41	4.15	4.1	2.00
Authorship of Methods Texts	4.19	3.7	3.13	6.53	4.0	5.00
Preparation of Commercially-Produced, Nationally Distributed Teaching Materials	5.56	4.2	4.16	7.56	4.4	6.83
Authorship of Journal Articles: Opinion, Discussion, Review	6.16	3.8	5.50	7.09	3.7	6.60
Leadership Positions in National-Level Reading Organizations	7.06	5.5	6.50	6.73	4.5	4.83
Preparation of Commercially-Produced, Nationally Distributed Testing Materials	7.22	3.9	5.70	8.25	4.1	7.83
Professorships in Reading: Graduate-Level and Research	7.65	3.9	8.33	7.91	4.6	8.00
Editorial Work with Major Journals in Reading	8.16	2.9	9.21	8.27	3.5	9.21
Presentation of Papers at National Reading Conventions	8.68	3.3	9.00	8.76	3.5	9.20
Editorship of Collections of Readings	9.12	3.7	11.25	10.88	3.4	6.87
Authorship of Journal Articles: Book Reviews and Critiques	9.13	4.1	8.63	9.09	4.0	8.75
Supervision and/or Administration of Reading Programs and Services: College or University	10.00	3.6	11.00	8.28	4.6	9.00
Professorships in Reading: Pre-service Teacher Training and Supervision	10.00	3.5	10.83	8.66	4.0	8.83
Leadership Positions in State-Level Reading Organizations	11.10	3.6	11.67	9.69	5.1	11.00
Supervision and/or Administration of Reading Programs and Services: School District	11.90	2.6	14.25	10.38	5.3	11.00
Supervision and/or Administration of Reading Programs and Services: Private	13.53	3.5	15.00	12.26	4.4	14.69
Coefficients of Concordance	.31356*			.16382*		

* $p < .001$

The coefficients of agreement found when the mean-rankings of the total sample and each sub-group were re-ordered are given in Table 5. All are highly significant ($p < .001$), which indicates strong inter-group agreement despite ostensible differences in the salient interests of the several sub-groups.

TABLE 5

Intercorrelations[1] Between Ordered Mean-Rankings For Total Group and All Sub-Groups

	"Large University" Group	"Others" Group	"Research" Group	"No Research" Group	"Teacher Preparation" Group	"Reading Services" Group
Total Group	95291*	.91029*	.96765*	.85882*	.96175*	95294*
"Large University" Group		.79412*	.96471*	.79412*	.96471*	.87059*
"Others" Group			.82206*	.80588*	.86765*	.95000*
"Research" Group				.82059*	.97058*	.87059*
"No Research" Group					.8[illegible]706*	.85294*
"Teacher-Preparation" Group						.91176*

[1] Spearman Rank-Order Correlation Coefficients (Rhos)

* $p < .001$

To sum up, the following generalizations appear to be warranted by the data:

1. Writing, research, and national-level organizational leadership seem to carry a good deal more status with members of our group than do supervision and/or administration of reading services and programs, preservice teacher preparations, or state-level leadership in professional organizations. No matter how the respondents were divided, the former activities were ranked high and the latter were ranked low. Both the inter-group and the intra-group agreement on these rankings are high.
2. "Large university" people and "others" do differ somewhat in the value they attach to one activity—the reading of papers at national conventions—but this difference is still slight in terms of absolute numerical mean-rankings.
3. "Research" people and "no research" people differ in their views of two activities: national-level organizational leadership and the administration and/or supervision of college-level reading services and program. The "research" people value the former activity more highly than do the "no research" people, and they value the latter activity less.
4. "Teacher preparation" people and "reading services" people differ in no major respect in terms of their relative rankings of pro-

fessional activities in Reading. It is interesting to note that they apparently value writing and research more highly than the activities most prominent in their own positions.

IMPLICATIONS AND DISCLAIMERS

In reporting these results we present no case for the veridicality of the statements of relative worth of one professional activity over another; to suggest that those activities scoring high *ought* in fact to be considered so is not our intent. Nor would we be surprised if the orders recorded in the big status ranking scheme in the sky were totally different from those that we have reported. There, perhaps, the last shall be first and the first last, with the "doers" taking preference over the "writers." Meanwhile, our purpose here has been simply to report the status-activity preference of NRC members—to tell it like it is in the NCR. Any inferences you may draw for your own personal vocational guidance should be considered purely serendipitous.

REFERENCE

1. Guilford, J. P. *Psychometric Methods.* New York: McGraw Hill, 1936.

Differentiation in College Effective Reading Programs

A. J. Pellettieri
St. Thomas University
Houston, Texas

A. College and University Reading Programs
  1. Are offered to help students who vary in
    a) their basic reading needs;
    b) backgrounds, schools, and training;
    c) intellect.

B. College and University Effective Reading Courses usually strive for comprehension, variability, and flexibility in study skills and vocabulary development.

C. "Why Differentiation" can be understood better by giving brief reading characteristics of individuals who make up college reading classes.

1. The honor roll student who memorizes, looks for the important part, and rehearses it in connection with the content or as to what the professor stressed or suggested.

2. A student who reads in whispers, as this "helps" his concentration.

3. Another who must look up word meanings a few times per page.

4. The sophomore who can not move along until the sound of each word registers in his mind.

5. A journalism major who understands significant prose quite well and reads fairly fast, but struggles through factual material.

6. One student of short stories bemoans the fact that he must read a page three or four times or he will forget what is on the paper.

7. And the college students whose vocabulary is at the upper junior high level.

8. Yet another who mortars one word meaning to the next until a sentence is read; then he reviews it to fix the meaning and the cycle repeats.

9. An account of two Ph.D. students, one in this third doctoral year in psychology and the other well advanced in languages, may be pertinent. The first could not cover the reading assignments; he otherwise ranked as A—B+ in scholarship. The other mystified her professors with her written or oral slanted answers to questions following her reading, in contrast to the excellent answers which she gave when the questions followed a lecture or demonstration.

10. Finally, the graduating senior in biology, who cannot read well in his major field.*

College students with these disabilities have serious need for changing their way of reading. Students from poorer social, economic, or cultural backgrounds, or with bilingualism, may be even more handicapped.

The preceding list is far from complete in understanding the scope of the problems which face administrators of reading programs on college and university campuses. For example, the more professional the college career, the greater the likelihood that the student will be a slow reader.

Among the slower readers are students of law, medicine, engineering, religion, and business. Within these groups are individuals whose college board scores range above 630. The author, in examining the high school credentials of representative students in this category, found that most had been culled from the top two deciles of classes graduating seven hundred to a thousand students. These entering freshmen at a prestigious Texas university had reading problems.

Consider, then, the plight of college students at the "B" and "C" levels. In these segments are students who have developed a seeing and a hearing memory in lieu of reading and those whose independent level of language operation is around the upper junior level grades seven, eight, or nine. Figures are sometimes useful to show the extent of the problem.

In another large Texas university which attempted to aid the freshman, the cutting point on the college entrance test was set only by the number of reading classes which could be scheduled. This meant twenty-five classes and about 500 students. At this stage, it included only those up to the thirty-first percentile. Obviously many hundreds more were in need of such classes.

It appears that the collegiate basis for the effective aspects of reading was neither properly understood nor recognized by administrative personnel. In the situation just mentioned, those students within the 31%ile and even to the 50%ile were academically unqualified for effective collegiate reading. Their needs were corrective and remedial work in high school level skills.

This point of many points must be considered. Effective reading serves the more able student. What continues to be overlooked is that many good students are slow and poor readers. Their "A" and "B" records symbolize only native ability. These symbols of quality tell nothing of how, in what time, or what mazes they went through in their reading.

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* For the record, the last three were helped significantly through analysis of their problems and a diversified program of reading. Personality or cultural traits were not factors here. Differential is used as relating to, indicating, or exhibiting a difference as in treatment, quality, variation.

Until more distinction and separation is made between 1) effective reading, and 2) corrective and remedial reading combined with or as study skills, the role of the reading program will continue to be a gimmick at the college level.

The need for differentiation may be observed from the beginning individual scores of two group samples, one of nine freshmen and another a group of twenty, a year later, made up mostly of freshmen. For comparative value, these students had scored mainly around 600 on the college board tests.

FACTS PERTAINING TO TABLE 1

Note that the slowest rate in Table 1, column 1, is 190 wpm, and the highest is 349. The material in SRA is easy newspaper level of reading suitable for grades 6-8. The comprehension for all students is nearly perfect; however, there are great differences in the rate of reading.

Between the two extremes in rate, the relationship is 1:2. For every half hour of reading by student four, he has a twenty-five minute waiting period until student nine catches up in reading.

TABLE 1

Freshmen
College Board*

	SRA		SCHRAMMEL		Rdg. Mng. 12	
No.	Rate	Comp.	Rate	Rdg. Eff.	Time	Grade
1.	347	100	185	95	5½'	8
2.	264	90	184	93	6'	10
3.	277	100	185	93	6½'	10
4.	349	100	178	93	9'	11
5.	252	100	158	96	8¼'	10
6.	240	100	157	88	9¾'	9
7.	277	90	185	95	6¾'	9
8.	252	100	144	90	9¼'	11
9.	190	100	122	90	10'	10
Aver.	271	98	166	93	8'	10
Range	190-349	90-100	122-185	88-95	5½'-10'	8-11
Diff.	159	10	63	8	4½'	3

* Scores 600 plus

For student nine, his pattern of being slow and systematic may well fit his nature. On the 25-minute reading test, he is the slowest with high comprehension, and his 10-minute reading rate is the slowest in study skills. A differentiated program could help this student reach the top in reading performance.

Students one, two, three, and four have much power that is not utilized, directed, or developed. Numbers five and eight are marking time in reading-for-facts, thinking, and study.

For the Schrammel column, the material is standardized through college senior levels. Again, there is a high confirmation in Reading Efficiency, which is the rate times comprehension, and much disparity in rate. For example, number nine's rate is slower than a seventh grader's. The 75%tile among seventh graders would outread the four slowest of the above freshmen. Four freshmen are reading at the 95%tile or higher, against college senior norms. Once more, the rate differences are considerable, but the quality is quite even.

In the Reading for Meaning column, the material is approximately equated for the twelfth grade. Notice again that the time required to complete the exercise varies from five to ten minutes with the quality of performance around the tenth-grade level, except for one student.

FACTS PERTAINING TO TABLE 2

In the group of twenty, the lowest rate is 144 wpm and the highest is 373 on the SRA. This is simple material. The comprehension range from 70-100%, with eighteen being between 80 and 100%.

Seven slow readers rate below 200 wpm with an average of 175 wpm and a comprehension of 85%.

Four rate near 300-373 wpm with an average of 340 wpm and a comprehension approaching a high 90%.

The in-between eight students ranged from 205-250 wpm, averaging 230 wpm with comprehension from 80 to 100%, averaging about 85%.

In summary, here is an example of twenty bright students whose comprehension is basically the same and yet the disparity in average rate shows:

Seven slowest at 175 wpm
Eight in-between at 230 wpm
*Four fastest at 340 wpm

Are the differences in handling factual material due to individual endowments, too little reading experience, poor study habits, or ignorance of the reading process? Because of the simple content, language and vocabulary meaning are not issues here.

The Schrammel columns reflect scores made on this twenty-five minute test. A rate of 133 compares with that of a typical seventh grader, 147 compares to the tenth grade, 158 is at the college freshmen level. Six students rate at or above the college freshmen level. Nine rate below or at the seventh-grade level.

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* Student 11 excepted

Sometimes the reading efficiency shows either the power or the weakness of readers. The efficiency is the product of the rate by the comprehension. An efficiency of 76 compares with the average ninth grader, while 86 compares with the average freshman. Eight readers score at or above the college senior norms. The efficiency of the three lowest readers is within college senior level, while eight score at the eleventh grade or lower.

TABLE 2

Freshmen
College Board*

	SRA		Schrammel		Rdg. Mng. 12	
No.	Rate	Comp.	Rate	Rdg. Eff.	Time	Grade
1.	292	80	161	92	9¾'	9
2.	197	80	147	92	12'	7
3.	239	80	139	87	10½'	9
4.	240	100	159	91	9½'	11
5.	221	90	149	85	12'	6
6.	197	80	101	80	13'	6
7.	328	100	177	82	13'	9½
8.	144	80	91	80	13'	7½
9.	204	90	133	76	11¼'	9½
10.	373	90	184	95	10½'	11
**11.	171	50	176	81	10½'	7
12.	240	80	129	73	13'	9½
13.	148	90	101	91	13'	7½
14.	190	70	108	81	13'	6½
15.	252	90	119	93	11¼'	8
16.	221	80	170	76	12½'	9
17.	190	80	137	93	11½'	10½
18.	240	80	125	90	12'	8
19.	177	100	101	87	12½'	9½
20.	373	90	133	86	11¼'	8
Aver.	235	86	139	86	11¾'	8.45
Range	144-373	70-100	91-184	73-95	9½'-13'	6-11
Diff.	229	30	93	22	3½'	5

* Scores 550-600 plus

** Number 11 is not included in the SRA column; his other scores are reliable

Reading for Meaning, see Table 2, contains some reading, definitions, thought questions, and outlining. A freshman should finish the task in six to eight minutes with the quality of work at the 11th-12th grade level.

Notice that four minutes separate the slowest from the fastest. In quality, the spread is five grades. Obviously, the range and the differences between students which appear in these columns soon become common occurrences.

Examine student two, who is a rather slow reader in all three tests, yet in the first two categories he shows good comprehension. In the third, he bogs down in quality. He is in need of corrective work.

Of the twenty, numbers 1, 4, 7, 10, 11, 17, and 20 would be good material for Effective Reading; 2, 3, 5, 9, 15, 16, and 18 should be given corrective assistance; and 6, 8, 12, 13, 14, and 19 would profiit from further analysis for remedial reading.

Reading materials used in tabulating for Tables 1 and 2 are either the same or comparable. The university is the same, but the subjects were from two successive freshmen classes.

FACTS PERTAINING TO TABLE 3

All fifteen members who make up the data for Table 3 have been to college. Only the last two, who are secretaries, did not graduate. The first four hold M.S. degrees; the other nine engineers have B.S. degrees.

The group did two of the flexible readings used by Spache and Berg in *Faster Reading for Business.* The first was a timed three-minute overview of the content followed by answering ten questions.

TABLE 3

Flexibility

No.	Reading I Time	 Rt. Ans.	Reading II Time
1.	8	4	15
2.	6	4	9
3.	7.5	4	14
4.	6.5	5	13.5
5.	6	6	25
6.	9	3	15
7.	7	2	26
8.	7	4	22
9.	6	7	10.5
10.	6.5	3	16
11.	7	4	23
12.	8	5	15
13.	8.5	3	15
14.	9	7	15
15.	11	8	14.5
Spread	6-11	2-8	9-26
Aver.	7.5	4.6	16.5

The answer score of 4.6 is average for this exercise in skimming, while the time of 16.5 in the scanning exercise II is rated very good, and those under 13.5 are rated excellent.

This writer varied it only by taking the total time in minutes to do both things. Reading II was locating the answers, one at a time, of the next set of ten questions, as in scanning. The time was important here in finding the answers, rather than the number of correct answers.

In column 1, the time spreads from six to eleven minutes between the fast and slow readers. The Masters showed no superiority over the others, and the time of the two secretaries cannot be minimized; this might again suggest that extra education doesn't necessarily produce faster readers.

The number of right answers in the first reading spreads between two and eight. To show flexibility, a score of five right is expected. Six readers are successful, including the two secretaries who score highest; and nine underperform. Perhaps the more important fact is the spread of six points for a college graduate group.

In the second reading, the time spreads from nine minutes to twenty-five, a difference of seventeen minutes. Here one might speculate as to the reason for the great difference. Number two finished in nine minutes and scored nine right; numbers 1, 3, and 4 did equally well but took about five minutes longer than number two.

Four of the group rate as fair readers, 22 or more minutes, and two are excellent, below 13.5 minutes.

FACTS PERTAINING TO TABLE 4

From a small college class in reading, the scores of five poor readers were selected for study.

The results are significant in the understanding of differentiation. These were students who struggled to make "C" in their studies or were such low readers that college courses requiring reading such as English, sociology, history and psychology made drop-outs of them.

The Schrammel Gray reading test was administered at the first and last sessions of the class. The results are all in percentile rank as shown in Table 4; first, as comprehension or the number right; second, as rate; and third, as comprehension efficiency.

Initially in comprehension, the two lowest did no better than average eighth graders. The two top ones at 33%ile at the start were comparable to ninth graders who rank at the 70%ile on this test. Yet these were all accredited college freshmen who in this activity are suited only for eighth grade competition. Note that all but one made considerable progress—a retraction will follow under comprehension efficiency. Student #1's 77%ile at the end compares to the 99%ile of ninth graders.

The gain in reading faster is good, but not always so when rate improvement is related to comprehension efficiency.

Numbers 1, 2, and 3 have profited from the training. The change from 90%ile to 80%ile for #3 is negligible when matched against his

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greater ability to increase the number of correct answers from the 28%ile to 65%ile. This was due to improvement in rate from 15%ile to 52%ile.

Number 4 makes a good model of one who learns to get more correct answers, dramatically changes his rate, and holds to his comprehension efficiency.

Numbers 2 and 5 are either just not suited to acquiring directed skills in Effective Reading or they are unable to stand the pressure of faster reading. Their drop in percentile rank in comprehension efficiency is too great.

For comparison, notice the same rank in the first column for numbers 1 and 2, and the contrast in the last column, 1 is up and 2 is negative. In the same way, examine 4 and 5, which are seemingly comparable; yet 4 holds even and 5 breaks precipitously. Two and five are not equipped for this type of course.

TABLE 4

Poor Freshmen Readers*
Freshmen Percentile Norms

	Comp. — No Right			Rate			Comp. Eff.		
No.	Before	After		Before	After		Before	After	
1.	33	77	+44	23	62	+39	65	93	+28
2.	33	72	+39	18	67	+39	90	35	—55
3.	28	65	+37	15	52	+37	90	80	—10
4.	15	47	+32	7	42	+35	70	70	0
5.	15	19	+ 4	7	23	+16	80	18	—62

* Total of 17 class hours

We obviously need to do more if we are to offer the courses. It may be challenging enough to ask whether such applicants should be admitted into college, and if enrolled, should not the administration require the passing of remedial or corrective courses probably paralleling a correlated course in counseling or personal psychology?

TABLE 5—TWO PH.D.'S, TWO HONOR STUDENTS

Four profiles of proven academic background are presented in Table 5. Two are men in their early fifties, one a Ph.D. physicist, the other a Ph.D. chemist. Two are graduating honor seniors from the same high school. The youngsters wanted to develop more skills in preparation for college. All were members of a recent course offered in Effective Reading. All four made considerable improvement in the three testing areas.

TABLE 5

Two Ph.D.'s, Two Honor Students

	Ph.D. in Physics		Ph.D. in Chemistry		Graduating "A" Honor Senior		Graduating "B" Honor Senior	
	Beg.	End	Beg.	End	Beg.	End	Beg.	End
Schrammel Gray								
G. C. Grade	16	Beyond 16	8	13	15	Beyond 16	—7	16
No. Right	93/100	122/134	51/69	69/80	79/88	115/134	38/50	85/100
Rate	185	247*	132	152	165	253**	85	185
Rdg. for Mng.								
Grade	7.5	11	6	10	7.5	12	6	11.5
No. Right	21/29	26/30	17/29	23/30	21/29	28/30	19/29	27/30
Time	9'	8.5'	11.5'	9'	8.5'	5.5'	11.5'	7'
SRA								
Rate	445	543	265	575	264	723	157	635
Comp.	.60	.70	.60	.70	.75	.75	.60	.75
Effic.	267	380	159	402	198	542	94	476

* Finished 8' early

** Finished 9' early

Some of the special points worth mentioning are that the physicist and the "A" honor student finished the twenty-five minute retest with eight or nine minutes to spare (see Schrammel Gray); and for the number right in the same test, notice that the numerators on the retest were significantly higher than the denominators on the beginning test for three of them; the great change, due to improved rate by the "B" student; the chemist did quite well for himself considering the anxiety he displayed. His graphological markings betrayed his condition; and this last item may well be cause for counseling or for excluding some students from effective reading courses.

SUMMARY AND CONCLUSION

Consideration has been given to several groups. In Table 1 are shown students who were credited as being from the top ten percent of their graduating classes in high school and who scored generally within 600 points on the college board tests.

Table 2 showed another group from the same university, as above. Table 3 showed young adults, all of whom had gone to college. Table 4 showed five students from a small university who were poor readers and were part of a class in Effective Reading. Table 5 afforded the opportunity to compare and contrast two Ph.D.'s and two honor students.

In all groups there were sufficient ranges of initial reading performance to substantiate the need for taking a closer look at college reading courses.

In all groups, there were sufficient ranges of ending reading performance to suggest that different types of reading courses should be offered.

Generally, the better performers at the start will be among the higher performers at the end.

There is supporting evidence that readers who show variability and flexibility will gain more from courses in reading.

The need for counseling and/or therapy is sometimes self-revealing, and such service should precede or parallel university reading programs. Table 4 had two and Table 5 had one, or possibly two, individuals, who needed counseling or therapy.

If programs in reading at the college or university are to serve the student, then more screening and diagnostic procedures need to be implemented. These will point out that more types of courses are needed.

Study Habits and Attitudes of Disadvantaged Students in a College Reading and Study Skills Program

George O. Phillips, Sr.
North Carolina College, Durham

Several investigations at the college level have been concerned with non-intellective factors in learning and the possible relation between such factors and academic performance. (1,2,3,7). A recent review of research by Neidt (8), involving such factors, is indicative of the scope and diversity of the variables included in this area of the educational experience. One reason for the increasing interest in the study of non-intellective variables is the fact that even when predictions of academic achievement have been most rewarding, other latent factors often appear to confound the results. Generally, multiple correlations of various intellective and achievement test scores with course grades are about .65. (8, 9). Phillips (10) obtained correlations ranging from .07 to .48 between SAT-V scores and grade point averages in several courses for a group of disadvantaged black college freshmen.

Among non-intellective factors which have been frequently investigated are the study habits and attitudes of the learner. Preston and Botel (11) have defined a study habit as a routine which a student practices regularly. Examples of study habits include keeping abreast of reading assignments, making economical and consistent use of specific locations and periods of time for daily study, and studying independently with profit. Sells and Trites (14) define attitude as "a psychological construct or latent variable, inferred from observable responses to stimuli, which is assumed to mediate consistency and covariation among these responses to stimuli, which is assumed to mediate consistency and covariation among these responses." (14, p. 103). In one context of reading instruction, McKillop (6) defines attitude as "a more or less stable tendency to respond in a favorable or unfavorable way to any topic, institution, practice, or person. Attitude thus, includes 'set' (a temporary attitude, a momentary state of readiness) and affective factors (value judgments rather than pleasantness or unpleasantness)." (6, p. 3).

Study habits and attitudes as related factors have been studied with increasing frequency within recent years. Some reports appear to consider one factor as preeminent over the other. For example, Brown and Holtzman (2) indicate that a number of studies have suggested that perhaps more than the purely mechanical procedures of studying are the student's steady, highly motivated effort and his attitudes toward school work. Symonds (15) also suggested that the difference between good and poor students of comparable intelligence is mainly one of attitude, set, and motivation, rather than professed study habits.

Investigations into the effects of study habits and attitudes upon reading performance, and vice versa, are abundant. The following examples are typical: Schubert (13) paired retarded college readers with students of unselected reading abilities to determine whether the retarded readers where characterized by study habits and attitudes and personality traits detrimental to progress in reading. Analysis of scores from the SSHA which he administered as a criterion measure revealed that reading retardation may be partially attributable to certain personality traits, attitudes, and study habits. Englander (5) employed an experimental and a control group to evaluate change in attitude resulting from reading instruction. His analysis of differences between means obtained from an attitude scale which he devised and administered to the groups revealed that attitudes towards words, reading, personal ability in studying, and reading were improved for students in the reading program. Schneyer (12) administered the Study Habits Checklist and the SSHA to four groups which he differentiated as High Improvement, Low Improvement, Average Improvement, and Attrition to determine whether study habits, methods of study, and attitudes are related to progress in reading. Analysis of variance applied to the data from the criterion measures revealed that no significant differences resulted among the groups for the Study Habits Checklist or the "study mechanics," "study attitudes," and total scores of the SSHA. However, the Low Improvement group had a tendency to have better study habits, as measured by the Study Habits Checklist, than the High Improvement group. The High Improvement group had a tendency to have better "study mechanics" and "study attitudes" and total study habits than the Low Improvement group as measured by the SSHA. Notwithstanding the growing number of studies of the non-intellective factors among college students, investigations into the study habits and attitudes of disadvantaged students in a college reading program are conspicuously lacking in the research literature. This report is part of one such investigation which involved this type of student.

PROCEDURES

The purpose of the study was to determine the effect of different methods of reading and study skills instruction upon the study habits and attitudes of disadvantaged black college freshmen. It was hypothesized that there are no significant differences among the means for the SSHA "total" score or the mean scores for the four "basic scales" for four groups in a reading and study skills course. The subjects were 102 freshmen in four classes randomly selected from a total of fourteen sections of the Reading and Study Skills course at North Carolina

Central University. The course is offered each semester, and students enroll in it for one semester. A different instructional method of instruction was randomly assigned to each of three groups. One section containing 27 students (henceforth referred to as Group A) was taught by a Teacher-Guided method. Another section with 25 students (henceforth referred to as Group B) was taught by an Individualized method. A third section with 27 students (henceforth referred to as Group C) was taught by an Audio-Visual method. The fourth section with 23 students (henceforth referred to as Control) was used as the control and was given no instruction.

Although each of the four groups was taught reading and study skills by a different method, the instructional goals were the same for all subjects. These goals were to teach students how to (1) improve their vocabulary, (2) develop and use efficient work-study skills, (3) increase their ability to understand and interpret their college textbooks, (4) practice flexibility in reading different types of college materials, and (5) prepare for, and work effectively on, examinations. No provision was made to teach students how to modify their attitudes. It was assumed, however, that a modification in attitudes would occur as a result of the experiences provided by the reading and study skills instruction.

To determine change in study habits and attitudes of the subjects, the Brown-Holtzman Survey of Study Habits and Attitudes (SSHA) was administered as pre-test and post-test measures. The characteristics measured by the SSHA are organized into four "basic scales," namely, "Delay Avoidance," "Work Methods," "Teacher Approval," and "Education Acceptance." The sum of the scores from the first two "basic scales" give a measure of "Study Habits;" the latter two give a measure of "Study Attitudes." By summing "Study Habits" score and the "Study Attitudes" score, a total or "Study Orientation" score is obtained. Pre-test and post-test means, standard deviations, and ranges for the basic scale scores and for the total scores for the SSHA were calculated. The *F* test was used to determine the significance of the differences among the means for the four groups. The probability value for rejection of the null hypothesis was the .05 level of confidence.

RESULTS AND DISCUSSION

Means, standard deviations, and ranges for the basic scales scores and the total scaled scores are shown in Table 1. The differences among the effects of the methods upon the SSHA variables are indicated by the F ratios below the table. Examination of the table reveals the following about the performance of the groups on the "Study Orientation" (Total Score) and the four "basic scales" of the SSHA:

Delay Avoidance. Groups A and B and the Control show gains between pre-test and post-test means. Group C shows a loss. The differences among the effects of the methods upon the means for the "Delay Avoidance" variable is indicated by the F ratio of 2.79. These differences are significant $(p<.05)$.

Work Methods. Groups A and B and Control show gains between pre-test and post-test means. Group C shows a loss. The differences among the effects of the methods upon the means for the "Work Methods" variable are indicated by the F ratio of .91. These differences are not significant.

Teacher Approval. Group B shows the only gain between pre-test and post-test means. Groups A and C and the Control show losses. The differences among the effects of the method upon the means for the "Teacher Approval" variable are indicated by the F ratio of 1.24. These differences are not significant.

Education Acceptance. Group B shows the only gain between pre-test and post-test means. Groups A and C and the Control show losses. The differences among the effects of the methods upon the means for the "Education Acceptance" variable are indicated by the F ratio of 3.37. These differences are significant $(p<.05)$.

Study Orientation (Total Score). Group B and the Control show gains between pre-test and post-test means. Groups A and C show losses. The differences among the effects of the methods upon the means for the "Study Orientation" variable are indicated by the F ratio of 4.05. These differences are very significant $(p<.01)$.

With respect to the hypothesis concerning the total score of the SSHA, it is evident that the study habits and attitudes of disadvantaged college students are modified by reading and study skills instruction. With respect to the hypothesis concerning the "basic scales" of the SSHA, the following are the observations: "Delay Avoidance" and "Work Methods" were modified–positively for Groups A and B and for the Control, negatively for Group C. "Teacher Approval" and "Education Acceptance" were modified–differently for different groups. It might be noted that Group B alone of the four groups shows gains on all factors of the SSHA. On the other hand, Group C alone of the four groups shows losses for all factors of the SSHA. The "study habits"–"Delay Avoidance" and "Work Methods" appear to be enhanced by the instructional method applied to Group B. This group was given reading and study skills instruction by an individualized method.

SUMMARY

Results from this study indicate that the study habits and attitudes of disadvantaged college students undergo changes as a result of exposure to reading and study skills instruction. Comparable students appear to react more favorably to certain methods of instructions, less

TABLE 1

Means, Standard Deviations, and Ranges for SSHA "Basic Scales" and "Total" Scaled Scores for Four Groups

			Delay Avoidance			Work Methods			Teacher Approval			Education Acceptance			Study Orientation (Total)		
Group	N	Statistic	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain
A	27	Mean	22.41	22.48	0.07	25.33	26.97	1.64	27.59	25.70	-1.89	27.07	25.44	-1.63	102.26	98.56	—3.70
		S.D.	9.54	8.99		8.03	6.83		9.03	8.67		8.54	7.92		29.53	27.10	
		Range	8-42	9-43		11-40	15-40		7-43	9-46		8-44	17-45		50-158	63-157	
B	25	Mean	24.12	27.04	2.92	26.96	27.88	0.92	25.68	27.00	1.32	27.52	28.00	0.48	102.68	109.12	6.44
		S.D.	10.55	11.26		8.96	9.75		8.21	9.16		6.25	7.95		26.49	32.07	
		Range	4-42	5-48		6-41	12-45		4-42	5-48		17-41	8-40		51-159	48-167	
C	27	Mean	22.82	21.51	-1.67	26.82	24.59	-2.23	25.00	23.33	-1.67	25.56	22.11	-3.45	101.19	90.89	-10.30
		S.D.	8.82	9.87		8.12	10.06		7.62	8.64		6.24	6.79		23.97	29.13	
		Range	9-40	5-40		10-39	6-36		9-42	8-45		14-35	9-35		50-139	40-145	
D	23	Mean	23.00	24.21	1.21	24.13	25.42	1.29	21.96	21.25	-0.71	24.38	23.79	-0.59	94.00	96.61	2.61
		S.D.	10.05	8.31		10.40	10.33		8.18	9.17		6.93	6.60		28.99	30.37	
		Range	3-53	9-45		6-48	10-47		5-39	4-36		9-35	12-35		23-154	38-165	
		F[a] =	2.79[b]			0.91			1.24			3.37[b]			4.05[c]		

[a] Test of differences among the methods.

[b] Significant at the .05 level.

[c] Significant at the .01 level.

favorably to others. Generally, it appears that the factors of the SSHA which represent study habits were enhanced by the instruction. On the other hand, it appears that those factors representing study attitudes lost ground. Other underlying factors appear to be operating Further study to determine their nature and influence is suggested.

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A V.I.T.A.L.I.T.Y. Center: Supplementary Reading Materials and Services

Lem Londos Railsback
Gary Job Corps Center, San Marcos, Texas

The V.I.T.A.L.I.T.Y. Center at the Gary Job Corps Center in San Marcos, Texas, provides Vocational Information, Technical Assistance, Logistics, and Innovative Techniques for Youth through special reading services.

Operated by the Division of Curriculum Planning and Research, the V.I.T.A.L.I.T.Y. Center maintains a collection of over twenty-two thousand current (1966-1969) pieces of free and inexpensive materials listed under nearly seven hundred titles. The collection serves as a library of small printed pieces to be used as supplementary aids by Corpsmen, teachers, counselors, residential staff personnel, and support staff members in their various operations. Whether the materials are used to teach reading per se: *The Forest Adventures of Mark Edwards* (American Forest Products Industries, Inc., 1967)—or to teach extra vocational content through supplementary reading (reading in the content areas): *Electricity and Wheels* (General Motors Corporation, 1953)—the materials provide opportunity for a wide array of reading experiences.

The library lending and other services—such as construction of special kits on specific areas of interest, development of new materials, and/or adaptation of materials—are coordinated so that a general emphasis upon reading is maintained throughout the Gary operations.

Both the materials and procedures are structured to serve specific areas of concern, as the following points indicate.

> V.I.M.: Vocational Informational Materials are specially constructed packets of business-produced materials for principal use in the shop by the vocational instructor. Each packet contains multiple copies of a particular publication. The vocational instructor can select and check out from the V.I.T.A.L.I.T.Y. Center the packets relevant to his particular shop.
>
> V.I.G.O.R.: Vocational Information Guidance Organization, Residential, is a boxed kit containing packets of information arranged according to Gary vocational areas. Each packet contains a copy of each publication relevant to a particular vocation. In other words, each packet is concerned with a vocation, and the kit contains packets on all the vocations. A kit placed in each residential block office serves as an "after-hours" vocational library for Corpsmen. The Residential Advisor is "check-out" designee for the block in securing the kits from the V.I.T.A.L.I.T.Y. Center. Since he should be able to

utilize the materials to great advantage in his counseling and guidance, the Residential Advisor can install the kit as a part of his office "fixtures and tools" at the residential site.

V.I.P.: Vocational Information Packets are simply another part and actually just a different use for the specially constructed packets of the V.I.M. service—that is, a series of packets related to the particular vocation. The only two differences are that each V.I.P. packet contains multiple copies of a single item and that principal users of V.I.P. service are basic education instructors. Since a basic education instructor may teach basic education classes for *several* vocations, he may utilize varying combinations of V.I.P. to relate to the varying vocational orientations of his classes.

R.I.P.: Resolution Impact Packets are specially constructed kits for use by instructional staff in "Friday Sessions" on consideration of positive resolution of special problem areas. Structures of kits vary with need and specific emphasis. Construction, distribution, and uses of kits will follow identified needs and emphasis and will be developed mainly from the ADJUSTMENT section of the V.I.T.A.L.I.T.Y. Center.

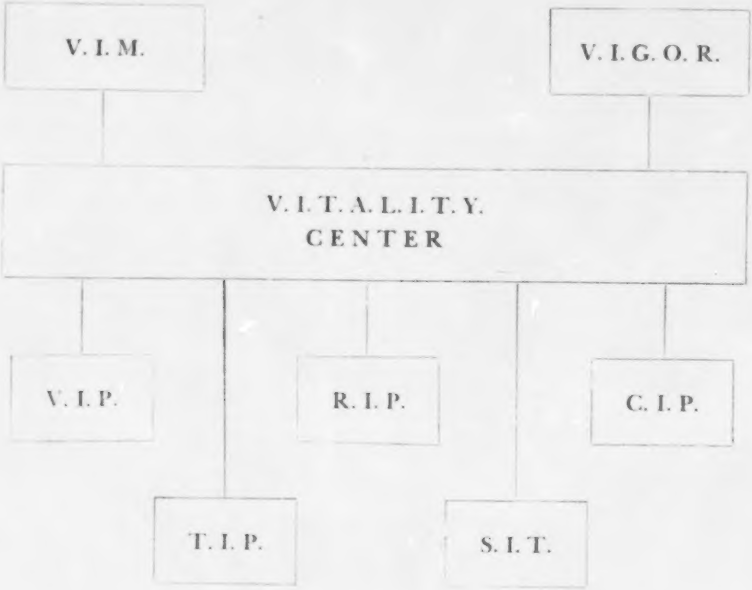
C.I.P.: Counseling Information Program is a series of materials concerning the individual's adjustment to his environment. A series of packets relating to special topics for individual and group use, the counseling packets are constructed from the ADJUSTMENT and GENERAL sections of the V.I.T.A.L.I.T.Y. Center. Instructional staff, counselors, and residential advisors select materials on basis of projected use of materials with the particular Corpsmen concerned.

T.I.P.: Travel Information Packets serve staff and corpsmen. Travel brochures, maps, statistical and geographic surveys, governmental statements, and many illustrated publications are offered in groups compiled into packets on a single subject or region or issued as singles. Users check materials from V.I.T.A.L.I.T.Y. for varying periods of time, depending on intended use. Instructors may check out packets to use in teaching a particular subject—e.g., "How To Read a Map."

As special services, a series of travel publications is located in the Gary Library, and another is located in the Secretaries' Retreat.

S.I.T.: Service In Training is a section of special publications and specially constructed kits for in-service training of staffs of the various areas. Construction of kits vary with user's stated needs.

The various components of V.I.T.A.L.I.T.Y. are designed to aid interested personnel in serving particular target populations with certain areas of interest. All components are coordinated through the V.I.T.A.L.I.T.Y. Center, as indicated by the following FLOW CHART and TABLE OF DISTRIBUTION of V.I.T.A.L.I.T.Y. Services. The V.I.T.A.L.I.T.Y. Center, then, is an attempt to encourage a general uplifting, upgrading and intensifying of the curricula. As with any other like attempts, of course, the added vitality emerges only through use.


V. I. M.
V. I. G. O. R.
V. I. T. A. L. I. T. Y.
CENTER
V. I. P.
R. I. P.
C. I. P.
T. I. P.
S. I. T.

FLOW CHART

DISTRIBUTION OF V.I.T.A.L.I.T.Y. SERVICES

Target Population: Teenage Dropouts in Residential Vocational Urban Training Centers: Gary Job Corpsmen

Name of Program and Designation	Principal Users	Components	Location
Vocational Information, Technical Assistance, Logistics, and Innovative Techniques for Youth: V.I.T.A.L.I.T.Y.	All Professional Staff	Coordinating materials, services, procedures, implementation, and experimentation for all special informational services.	Curriculum Library
Vocational Information Materials: V.I.M.	Vocational Instructors	Series of packets related to particular vocation. Each packet contains multiple copies of a single item.	Curriculum Library
Vocational Informational Guidance Organization, Residential: V.I.G.O.R.	Residential Advisors	Series of constructed packets of materials on all vocations, arranged by clusters. Each packet contains one copy of every item related to the particular vocation. Packets for all vocations are included into a kit for each Residential Block.	Residential Advisor's Office
Vocational Information Packets: V.I.P.	Basic Education Instructors	Same as V.I.M. except that probable choice of items may include packets for several vocations; also special packets constructed when needed.	Curriculum Library
Resolution Impact Packets: R.I.P.	Basic Education Instructors	Special kits on single topics for use in "Friday sessions" on consideration of positive resolution of special problem areas. Structures of kits vary with need and specific emphasis, developed from Adjustment Series.	Curriculum Library
Counseling Information Program: C.I.P.	Instructional Staff, Counselors, Residential Advisors	Printed information for group or individual counseling regarding the individual's adjustment to his environment, constructed from Adjustment Series.	Curriculum Library
Travel Information Program: T.I.P.	Staff and Corpsmen	Multiple types of travel, geographic, governmental, and recreational materials for use in packets or as singles; instructional packets for special areas.	Curriculum Library
Services in Training: S.I.T.	Instructional Staff, Residential Staff, Counseling Staff	Special publications and specially constructed kits for in-service training of instructional, residential, and counseling staffs and other groups in need of special training materials.	Curriculum Library

Critical Reading for the Superior Student

Bernard Schmidt
Purdue University

This paper is restricted to a discussion of the reading of what I call serious fiction. By serious fiction I mean novels, short stories, and plays wherein the author makes a sincere and honest attempt to portray life as he sees it, not as he or his audience may want it to be. By "serious" I do not mean gloomy or pessimistic: Bernard Shaw, for example, is a serious writer; *Huckleberry Finn* is a serious book.

I have no satisfactory definition for reading of the kind I intend to discuss. It can be said that critical reading is independent, analytical, creative, problem-centered, participatory, truth-seeking, prejudice-free, imaginative, and so on, but terms like these, at least for me, float about freely and cannot be seized and formed into a manageable definition. I believe, to state it simply, that all reading of mature fiction beyond the getting-the-plot stage is of necessity critical reading. The writer has made this inevitable because he is forever making points, throwing out challenges, confronting our prejudices, and illuminating the human scene. The reader cannot evade impact, reflection, and evaluation; he cannot avoid asking himself three of the cardinal questions of all good reading: what is this writer *saying?* How do I *feel* about what he says? *Why* do I feel as I do? The depth of the reader's questioning and the subtlety of his thinking and feeling depend of course on his maturity. Certainly in reading from the seventh grade upward the "why" begins to take precedence over the "what." I am not saying critical reading begins only when students reach the seventh grade. Far from it. It may begin even before the child knows language. When the kindergarten teacher draws a dog on the chalkboard and gives it the head of a bird, or maybe three tails—then asks her pupils for comment—she is already teaching critical reading.

Now if you accept for the moment the notion that all reading of serious fiction beyond memorization of plot is critical reading, where does the superior student fit in? What characteristics does he have that we ought to be aware of? Let us look at a few. In the first place, he will probably have a relatively high intelligence—longer, more sensitive antenna, that is; or the capacity to see relationships more readily. As a result he will probably be more knowledgeable. He may not be more original or imaginative, but he has probably read more than other students. He is more likely to have confidence in his opinions—he may, in fact, have too much. He may not know that having a right to one's own opinion is often no more than a right to be wrong. But usually, he will require less background material, less explanation, less time spent on structure, organization, and clues in order to get at the heart of the matter.

Yes, the heart of the matter. The term sounds smug, certain, almost arrogant—qualities hardly useful to critical reading. And yet I believe it is the teacher's job, especially with superior students, to discuss with them his version of what serious fiction is all about. He should, of course do this in an open-minded way emphasizing his fallibility, listening to their versions, and reminding them again and again that it takes two to read a book, the writer and the reader, and that there never will be two people who get precisely the same reaction to a piece of good fiction.

Nevertheless, pieces of serious fiction have a lot of common denominators, and the teacher might well make his own list for class discussion and for application to the stories assigned in class. Here are a few that emerge repeatedly, some applying here, others there. Perhaps no lasting book will have them all, but any book that doesn't have a generous supply of them is not likely to last.

1. Has originality
2. Has memorable characters
3. Is an honest discussion of the human situation
4. Is true to human nature
5. Is open to various interpretations
6. Deals with an identifiable problem or condition
7. Creates a world of its own
8. Intensifies, clarifies, and deepens our emotions
9. Indicates the author has used selection, arrangement, order, and pattern to clarify its central assertions
10. Offers a high form of pleasure

All of these, I think, and many more, can be discussed with students who are bright and imaginative. Buttressed with illustrations from assigned stories, they become understandable to most students in a surprisingly short time.

I have not put in this short list what to me is the most important common denominator of all. We have long called it the theme or the central idea. Henry James puts it in the form of a question, "What does the writer think about life?" Pasternak calls it the "statement about life." Melville calls it the "why?" There are dozens of other ways to say it, but if it isn't said at all, then the core of the work is lost. What the writer says about the human condition is what counts. Neither we nor the students need agree with him, but we must try to understand what he says. Form ,structure, influences, sources and direction—all of them put together are not as important as the message. In serious fiction, the medium is not, and never will be, the message. The serious writer doesn't flinch; he doesn't cover up, he knows there are no stereotypes in real life, no good guys and bad guys; he knows that living is often rich and joyous; he also knows that sooner or later everyone must collide with life.

One more fact we ought to make clear to our students is that good writers, with few exceptions, are moralists. By this I mean (1) they want people to behave better than they do; (2) they try to make us look honestly at ourselves and our universe; (3) they are profoundly compassionate. They not only prefer courage and kindness and decency; they have pity and humanity even for monsters. They may not have any interest in dogma and denomination, but they are religious.

But after all of this has been said and discussed and illustrated from the stories at hand, a bright student in the back of the room raises his hand. "I don't like this story; I don't agree with anything the writer says. I read a critic who said he is a phony." To such a student let's give the credit due—at least he's reacting. But let's also point out to him that the road to open mindedness and understanding is full of booby-traps. What for instance, were his preassumptions before he read the book? What of his prejudices, his background, his personal experience? What about his emotional and intellectual development? How much has he read and thought? One swallow, he might be reminded, doesn't make a summer, and one opinion doesn't make or break a story. Has he asked himself that all-important question, "*Why* do I feel as I do about this story?" Until he does, he is not going to be a really critical reader.

And let him beware of literary critics; no, not shun them, but circle them cautiously. Granted the best of them know more about books than we do. But knowledge is not infallibility. And no one of them has all the truth by the tail. The cautious reader will not believe all they have to say. He will read several of them, not only one. He is probably better off not to read *any* until he has himself read the work they are discussing.

His best defense against submission to critics and to his own first violent reactions is to read widely, to become acquainted not only with what Matthew Arnold called "the best that has been thought and said," but with as *much as possible* of what has been thought and said. Only then will he be safe from the trap of snap judgments and from an obsession with famous names.

Let me cite one example of this trap. Some years ago a well-known critic suggested there might be a homosexual relationship between Huck Finn and Jim in *Huckleberry Finn*. Now this critic is certainly entitled to his opinion. Some people liked his article. But one can't help wondering how many professors, graduate assistants, and high school teachers fresh from summer seminars, have since then walked into English classes with the announcement: "Next we take up

Huckleberry Finn, a study in homosexuality." The writer knows of one instance where this happened in a seventh-grade class.

To improve his critical reading, then, the student will try to understand what serious writers are attempting to do. He will learn, and reflect on, the common denominators of lasting fiction. He will look for the heart of each work, judge it according to his own experience, and ask himself why he came to his judgment. He will avoid conformity and authority. And he will try to develop what Rachal Carlson called the "sense of wonder"—that intense curiosity that leads to so many open doors and expansion of horizons. He will try for open-mindedness and humility; he will try to see what *is* and not what he merely *wants*. He will seek differences of opinion and will take advantages of opportunities to express himself. He will learn to listen. He will give everyone, including every writer, a chance to have his say. And he will never forget the Greek adage, "Know thyself."

And if we as teachers help him even a little toward these goals, we will not only have helped him become a sharper, more critical reader, but will have done a little toward making him more human, more tolerant, and inevitably, more compassionate.

We will have helped him to open windows to dozens of new vistas, new pleasures, and new understanding. We will have helped the great writers to refine his feelings and his taste. Maybe he will understand himself and his fellow man a little better. And best of all, we may have helped him to become a bit more independent that before. We will not always be able to measure very much of this with tests and research, but no matter. Who was it that said, "Much of what can be proved isn't worth proving"?

Techniques for Rate Pacers*

J. Florence Sherbourne
Northwestern University

Many critics of the so-called machine-oriented reading courses claim that students become so addicted to the use of machines that they cannot read successfully without them. I once hear such a critic speak of "such an absurdity as a room lined with rate pacers."

Now it is true that a student *can* become addicted to machines, such as rate pacers. But it is not necessary. And if students are taught correctly, they will not become so addicted.

Other critics claim that students can gain rate without machines. It is true that *some* students can gain rate satisfactorily without the use of machines. But machines are mighty motivators. What is more convincing to a slow reader than to find that he *can* read faster with the help of a machine? Knowing this fact, he can go on with confidence to practice timed reading independently of the machine.

It is the purpose of this paper to present some techniques I have successfully used with rate pacers.

INTRODUCTORY TECHNIQUES

After you have shown the student how a rate pacer operates, give him some practice in using it without bothering with rate. For this practice, allow him to use any somewhat easy reading material. Show him how to manipulate the machine until he finds a comfortable reading rate; allow him to read at this rate for a few minutes. Then ask him to adjust the pacer so that the light or shutter is moving fast enough to make his reading a bit difficult, but not so fast that he cannot understand the material. Allow him to spend some time, perhaps the rest of the period, reading at this rate.

This practice does two things: It acquaints him with the rate pacer, and it introduces the idea that he must push himself in order to gain rate.

After this practice you can show him how to compute rate. Since I am used to a rate pacer which uses a moving light, I shall describe the method I use with it. But, since all the rate pacers make use of some kind of word count, this method can be adapted. Choose some relatively easy material with a known word count of, say, perhaps, fifty. Have this number written at the top of the material, and explain what it means—fifty words on the average to the inch— and that it will be used to compute rate. Then tell your students to find a comfortable reading rate, as they did before. After they have read for a few minutes, ask various students for their scale settings, and tell each one to multiply that number by the word count, in this instance fifty, in order to get his rate (words per minute [WPM]). Thus develop the principle that the scale setting times the word count equals rate in WPM.

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* Years ago, while I was developing a reading program at the University of Arkansas, I visited Purdue University, and I am indebted to professors whom I met on that visit for the seed ideas of many of the techniques described in this paper.

After this principle is developed, you might say something like this:

"To get your rate you multiplied your scale setting by the word count, (in this instance, fifty). Let us look at this formula:

$$\underset{50}{\text{WC}} \qquad \text{X} \qquad \underset{5}{\text{Sc. Set.}} \qquad = 250 \text{ WPM}$$

Now suppose you want to read at 300 WPM. (Or some other number appropriate to your group). You will have this formula:

$$\underset{50}{\text{WC}} \qquad \text{X} \qquad \text{Sc. Set.} \qquad = 300 \text{ WPM}$$

How will you find the scale setting?"

The answer will be apparent: you divide 50 into 300; you will get 6, and so you set the pointer at 6.

Now ask each student what his previous rate was, give him a rate 25 or 50 words higher than he has been reading, ask him how to set the pointer for that rate, tell him to set it and to read for awhile, perhaps till the end of the period at that rate.

If you are going to use material of varying word counts immediately, it would be well, before you take up further work with the rate pacer, to introduce material with different word counts, have your students read it, and compute their rates for this material. If you do this, ask the students to set the rate pacer for specific rates by using various word counts. But if your students are going to be using material with a uniform word count, the practice of using different word counts can be put off to a later date.

No rate pacer is stop-watch accurate, nor is it meant to be. It *is* sufficiently accurate to push the student and that is what is needed. For this reason, do not try to compute too closely. When making a word count, round it off to a multiple of 5—37 should become 35; 48 should become 50; etc. This is because the scale is set for such multiples only. It is impossible to set a pacer for such a rate as 332.

REGULAR RATE PACER PRACTICE

Practice with a rate pacer, as I have stated, can give the student self-confidence by showing him that he *can* read faster. It also gives him practice in this faster reading. For these reasons, after an initial clock test, start the student on regular rate pacer practice.

Reading at a rate determined in consultation with you, he should read a selection from his drillbook and answer the questions at the end of it. He should mark his own work and should discuss with you, in class or out, any questions whose answers he does not understand.

If the student makes less than 70% on the test, he should not lower his rate. Instead, after he understands the answers to the questions he missed, he should read the selection over at the same rate. He need not take the test a second time. Usually, after this procedure, he can read the next selection successfully without lowering his rate.

To insure good study habits, teach him to survey each selection before he reads it. This survey should include reading the title, any introductory remarks, the first paragraph, any headings in different type, and the last paragraph. It also should include studying any pictures or diagrams.

AN EXERCISE TO INCREASE RATE PACER RATE

Once the student is at home with the rate pacer and his drillbook, you can give him an exercise which will increase his rate on the pacer usually by as much as 100 WPM, sometimes more. In this exercise, the student should start with a rate beyond him, approximately 200 WPM, and gradually step it down until he finds himself reading with understanding.

Start this exercise by instructing him to set the rate pacer 200 WPM higher than he is reading and tell him he is *not* to read the selection at this first setting, but to scan it by keeping his eyes moving in the light or ahead of the shutter. Tell him that when he has finished this scanning, he should decrease his rate by setting it down at a specified distance on the scale and scanning it again. Tell him to continue to decease his rate in the same manner until he finds himself really reading and that, when he does, he should take the accompanying test. If he scores at least 70%, instruct him to read the next selection once only at approximately the same rate he stopped reading the first selection, and then to take the test. Usually the student will find, to his pleased surprise, that he can read 100 WPM or more, more than he thought he could.

There are two things to watch when administering this exercise. One is the number of times the student goes over the selection; he should do so at least three times. If he does not, it has been my experience that he may make 70% or more on the first test, but that he will be unable to hold his rate on the second selection and, at the same time, to make 70% or more on the accompanying test.

You must see, too, that the student reads the second selection at approximately the same *rate* as the first, not necessarily the same scale setting. If the word count changes, the scale setting will of course change too.

You may have several questions about this exercise. First, is the grade on the selection read in this manner valid? After all, the student has read it at least three times. The answer is that it really doesn't matter. By getting his eyes accustomed to swinging across the page in an increased rhythm, he is enabled to read the second selection at an increased rate and make a satisfactory score on it. Why take the first test then? When the student is ready to take the test, he feels that he understands the selection.

There is another question. What if the student doesn't make a satisfactory score on the second test? Then inspect his record to see whether or not he is trying to read more than 100 WPM faster than his first rate pacer rate. If so, then tell him to try reading at his first rate plus 100 WPM. In all probability, he can.

This exercise can be used in a variety of ways. It can be used as it is described here to raise the student's rate on the pacer. Then he can go back to regular reading on the pacer to fix this new rate.

It can also be used at any time the student's rate needs a boost.

A slight change in this exercise is particularly helpful to very slow readers. In this variation a student sets his rate high, then steps it down as has been described. But he uses from three to five pages of a book, takes no test, and goes immediately to a selection from his drillbook.

TRANSFERRING RATE FROM THE RATE PACER TO THE CLOCK

The student should begin transferring his rate on the pacer to a clock rate as soon as possible after he has established a desirable pacer rate. To effect the transfer, ask him to reread a selection he has already read by the pacer, then follow it by a clock reading of a new selection. So that the clock reading will follow the pacer immediately, ask him to survey the clock reading before he does the pacer reading. Except for this variation and that he times himself by the clock instead of the pacer, the student should do his clock exercise exactly as he does his pacer exercise.

At first the student's clock rate will probably be considerably lower than his pacer rate. This latter rate then becomes his goal for his clock rate, and he should not raise the rate on his pacer until his clock rate approaches it. Usually a pacer rate 100WPM higher than his clock rate is acceptable.

BOOK READING

For the most part it seems wise to delay much book reading until the students had read for two or three weeks from his drillbook. This is because the drillbook selection, with their accompanying tests, help him read for understanding and recall; at the same time they give him practice in reading faster.

A REAL RATE-RAISER

One of the best exercises I know for raising rate, even that of the slowest student, is reading a book in this fashion:

In consultation with the student, choose a book that interests him and a clock rate you think he can attain. Then ask him to read five pages by the pacer and one page by the clock, repeating this process until he can read the one page by the clock at approximately the same rate as he can read it by the pacer. Next ask him to read five pages by the pacer and two by the clock, then five pages by the pacer and three by the clock, and so on, until he can read five pages by the clock at approximately the same rate as he can read five pages by the pacer. If at any time his clock rate surpasses his pacer rate, he should not set the pacer rate up; instead he should go on to the next step, that is, add a page to his clock reading.

The student can do further book reading in larger and larger units: five by the pacer and five by the clock, seven by the pacer, and seven by the clock, ten by the pacer and ten by the clock, and so on. As with his drillbook reading, his clock rate at this stage can be considered satisfactory if it is within 100WPM of his pacer rate. In my experience, more difference than this does not usually effect a carry over.

RACING

An exercise for achieving further independence in reading is called *racing*. In this exercise, instruct the student to place his book on the table so that the light or the shutter touches only the edge of the page, to set his pacer as usual, then to see whether he can read to the bottom of the pages as soon as, or before, the light reaches it.

There are several ways to use racing. A drillbook selection can be raced and followed by a clock reading of a second selection; a given number of pages of a book may be read in this manner before the clock reading of the same number of pages; or from five to ten pages of a book may be raced before the clock reading of a drillbook selection.

FINAL CLOCK READING

In whatever ways you see the pacer, close your rate work by clock reading. Here are some suggestions:

Instruct the student to read five pages of a book by the clock, then read the next five pages by the clock trying to increase his rate.

Instruct the student gradually to increase the pages he is reading 7, 10, 15, 25, and so on, up to 50—without decreasing his rate.

If his rate drops somewhere along the line, you may accept the decrease providing it is not too great. If it is, you may instruct him to read a given number of pages by the pacer at approximately 100 WPM higher than his last clock reading, then to read the same number of pages by the clock.

As a sort of postscript, let me add that a rate pacer may be used to slow down the rate of a student who is reading rapidly, but carelessly and inaccurately.

Use of the Cloze Procedure in Improving Comprehension of Junior College Readers

Elmer L. Smith
Morton College

When I first read about the cloze procedure some ten years ago, I was attracted by what seemed its possibilities. It became the subject of some experimentation with freshmen and sophomores in high school reading groups. At that time most of the literature dealt with the use of the cloze procedure in assessing comprehension and measuring readability. However, Rankin (5) had mentioned its possibilities in teaching comprehension. This was the use I made of it in my experimentation.

This experimentation could be, at the best, classified as research in action. There were no controls, models, nor really much organization. Some of the students appeared to make progress by using the materials prepared according to the cloze procedure; indeed, more did than did not. In addition, a number of the students improved in the word attack skill of using the context to figure out the meanings of words. This progress was indicated by the informal reading tests used at the end of the semester. Comprehension gains were good, but the really great improvement, in some cases, occurred in using the context.

I was so impressed by this activity in vocabulary that when I went back to school for further advanced work, I undertook some research into the use of the cloze procedure as a possible measurement of vocabulary.

Excerpts were taken from graded expository articles and every 10th concept word was deleted: nouns, verbs, adjectives, and adverbs. Then individual students, high school sophomores, read these selections aloud, adding the words they thought fitted the blanks. The students were asked why they had made their decisions and their answers tape-recorded. This procedure was pretty much the one described by Jenkinson (3) in her study. I had thought I might devise some system of measuring vocabulary from this procedure, but I could arrive at nothing specific. However, a fascinating insight into reading activity was offered. But there was a question here: were these students demonstrating comprehension or vocabulary skills? For me, this emphasized the question as to what was the relationship between vocabulary and comprehension.

VOCABULARY COMPREHENSION

Despite all the activity which has taken place in the vocabulary area, such as the compilation of graded word lists and the development of vocabulary tests, not too much appears to be known about this relationship between vocabulary and comprehension. At first thought, it would seem to be obvious that one who was deficient in vocabulary, *i.e.*, a stock of words which vocabulary is generally taken to be, would surely have trouble comprehending what he had read or attempted to read. However, in my years of administering reading tests, I have seen many instances where a student's low score in vocabulary was contradicted by a high score in comprehension, and many cases where just the opposite occurred. These cases happened too often to be explained by physiological or emotional factors, which are occasionally offered as possible causes for such anomalies. The truth, it seems to me, is that there is of course more to reading than knowing words; putting the words together into the relationships that make up the overall meaning of the reading passage is reading. Some are more skilled at this, despite an apparent paucity of vocabulary. But this is the question again: the relationship between vocabulary and comprehension.

What is Vocabulary?: "Vocabulary" has a nebulous meaning. Most people know what they are talking about when "word attack" is discussed. The skills involved in using the context in which a word occurs, in using the structure of words, and in using the printed equivalents of word sounds—all of these skills are fairly well understood. A student's ability to use these skills can be tested and exercises devised to train students to use these skills better.

But how does the traditional vocabulary test measure vocabulary skills? And what is this kind of test measuring? This type of test is composed of a list of words each accompanied by four or five possible meanings. The student tested indicates how many of these words he can connect with the one proper meaning. This, of course, does not show that he can really recognize the word usefully, for any word may have a multiplicity of meanings, the most common of which may not be represented among the test choices. It does not appear to measure any of the word attack skills or at least not with any directness so that it can be of use to the diagnostician. Few of these tests present the word in any useful kind of context, and as Pauk (4, p. 4) points out, "many of the words on these vocabulary tests are esoteric; that is, they are seldom found in the practical textbooks used by students." These tests do not even give a useful estimate of how many words a student knows.

There is a move among test-makers themselves away from this traditional vocabulary test. The Cooperative Reading Test, one of the best known and most widely used of reading tests, contained as one of its major parts just such a vocabulary test. When Davis, who played a major role in the construction of this test, came out with a new form, under his own name, a reading test which is also widely used, he omitted the vocabulary test entirely. Pauk (4, p. 4) believes that the kind of reading test which would be most useful for college students would be untimed and concentrated on the "straightforward expository prose of textbooks" It would have no vocabulary part. I myself am suspicious of this area [illegible]ocabulary when it is separated from word attack skills and is represented by the conventional vocabulary test.

Vocabulary is often broken down into kinds of vocabularies—listening, speaking, reading, and writing vocabularies—the thought apparently being that these represent different degrees of word knowledge, leading from the receptive to the active. The boundaries here are vague; where does one degree of knowledge cross over to another? Certainly, vocabulary tests do not indicate which of these sub-divisions are being measured. The cloze procedure also does not give any information about this, nor can it be used, as far as I can see, to teach a student these shadings of knowledge.

This does not mean that people do not vary in the number of words they know, nor that people can not learn new words. But the process of word learning is an active one, and word storage must be a residual of this. This active process includes the skills of word attack, and here, no doubt, the cloze procedure can play a part. Guice (2, p. 88) states that "possibly the cloze is more closely related development than comprehension." Further, he refers to the finding of positive correlations between cloze and vocabulary tests. However, if we consider what has just been said about vocabulary tests, it may not be clear what such statistics do indicate. Guice goes on to state that it "seems reasonable that cloze exercises would require of the individual very close attention to detail, word association, context, and the like. This possibly causes the student to concentrate so diligently upon the proper responses that much of the essential detail is lost and the gain from words in context does not contribute to a high comprehension score. (2, p. 88) This appears paradoxical, "very close attention to detail" resulting in the loss of "much of the essential detail." Actually, "close attention to detail, word association, context, and the like" sound like the components of active reading, of what might be called reasoning in reading. I would say that this is the kind of activity that the cloze procedure measures and can aid in improving.

Comprehension as Reasoning: In an early pioneer study, Thorndike (7) concluded that reading was a reasoning act requiring such activities as those just mentioned. He further decided that words in the context about which the reader had faulty knowledge could distort the reader's understanding, a kind of reasoning from false premises. Instead of using the context to get the words, the words were put together to get the context.

In a later study, Davis (1) found one of the most important factors in reading comprehension to be the ability to see the relationship of ideas, having to do with reasoning in reading. Another, but not so important, factor he discovered was the ability to figure out from the context the meaning of an unfamiliar word or to determine which one of several known meanings of a word is most appropriate in its particular contextual settings. Later yet, Smith (6) in his book outlined a strategy in comprehension which appears to be that of reasoning in reading, a form of inductive reasoning in which an hypothesis, the main idea, is evolved from the details in a paragraph. In this same book, under vocabulary study, all the attention is given to the one-word attack skill of using the context. As these investigations would indicate, comprehension and using the context to get word meanings while related are distinct, to be studied separately.

My own experience would confirm this distinction. The cloze precedure is not an instrument especially suited for practicing the use of words to get word meanings. It might be said that it requires a stock of words which can be quickly summoned up in order to fill the gaps in meaning, but the range of meanings possible in doing this are wide enough so that the stock does not have to be extensive. One has only to give an exercise in the cloze to a group to see actually how many different words may complete the meanings of the relationships in a reading selection. It is in seeing these relationships that it seems to me the cloze procedure gives the most practice. Davis (1) said that the factor involving the ability to see relationships was the most difficult to measure and that most reading tests did not do so. I believe, however, that the cloze does do this.

USING CLOZE PROCEDURE

Some time passed after my first experiments with high school students before I again took up the cloze procedure. Now my work involves junior college students, mostly freshmen, and the work has but recently begun. It is still going on. First, it was used as part of the initial diagnosis. Three selections of straight expository prose of about 350 words each, and at 7th, 9th, and 11th-grade levels were selected. Every 10th concept word, nouns, verbs, adjectives, and adverbs, was omitted with a numbered blank replacing it, and numbered spaces in the margin provided for writing out the reader's choice to fill these blanks. This test is used in conjunction with the regular standardized test which has always been used. Secondly, similar cloze exercises are used with the reading groups. The group writes out the exercise and then these exercises, after having been checked by the teacher, are gone over orally with the group. No complete statistics have as yet been collected for this cloze test or for the results of using the exercises with the groups; however, certain points are apparent.

The great advantage of the cloze procedure is the opportunity it gives the teacher to observe the student reader in the act of reasoning out the meanings in a reading selection. For years researchers have sought to get at this process, and for years they have been able to observe only symptoms—witness the extensive literature on eye-movements, or, at the best, reactions as with informal reading tests and other such experiments with oral reading. Written reading tests, of course, fall into this same category. Because of the disparity existing, sometimes, between reading selection and questions about the selection, written tests are the worst.

With the cloze exercises the observer witnesses the reader's point-by-point involvement with the context, sees the reader making his way through the reasoning processes of comprehension. Even in the written cloze exercises the teacher has a good perspective of this blow-by-blow procedure because that is exactly what the reader has recorded. In going over the exercises orally with a group after these exercises have first been written out, the teacher may investigate more thoroughly. My experience has been that a kind of discussion occurs unlike any I have tried to develop hitherto. This is, quite apparently, not going over a reading selection but going through it. The results, so far, have shown an interest, not always a friendly one, unlike those I can generally arouse. This comes, I believe, from the teacher's being able to pinpoint each stage of comprehension progress systematically, which under the reaction process is not possible. There, no matter how well prepared he is, the teacher still has to guess what the student did. In the cloze exercises the teacher takes it as it is.

Experience with the cloze exercises appears to bear out what Thorndike so long ago theorized: erroneous knowledge of words distorts the student's comprehension. To further investigate this, I added an innovation to the original procedure. I had the students look over the cloze exercise first, before coming to grips with it, and jot down at the bottom of the paper on which the exercise was printed those words which were familiar to them. It was surprising how few words the students actually noted, and even more surprising to find revealed the words they did not know but apparently thought they did.

Another factor that the cloze exercises revealed, one that I have always been interested in but never been able satisfactorily to get at, was the part that grammatical knowledge plays in comprehension. This knowledge quite obviously is basic to the total meaning of a reading selection. One who can not distinguish the noun concept from that of the verb will never be able to understand the relationship of ideas which makes up meaningful communication. The conventional reading tests can not get at this to any major degree; even informal reading tests are really questions after the fact. But in the cloze exercises the observer can witness the reader mistaking verbs for nouns with all the consequent distortion of meaning. The students who make such mistakes are very poor readers, indeed, real remedial subjects. The standardized test confirms the fact that they are very poor readers, but only the cloze reveals the extent of their confusions. With the open door policy observed by most junior colleges, a number of these poorly prepared appear every semester.

Others who make a fairly good showing on the cloze test, even though they may not be able to do much with the upper graded material, can be put in groups arranged pretty much by the level of the cloze test. Then a variety of materials is used in their improvement training but the cloze exercises are used regularly to get them to talk about their reading and to help them see their own needs. Too often these readers can not see beyond the context of the immediate sentence, often the phrase or word. By using the results of the cloze exercises these readers are brought to see the overall context so necessary if they are ever to go beyond simple comprehension.

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Factors Influencing Junior High School Teachers' Attitudes Toward Teaching Reading In the Content Areas

Richard J. Smith **Karl Hesse**
Madison Public Schools, Madison, Wisconsin

Wayne Otto
University of Wisconsin

BACKGROUND

All secondary school students can profit from instruction that helps them to read the material assigned to them in their content area classes. Because of the large number of students, the few special reading teachers available, and the different skills demanded by each content area, it is apparent that content area teachers themselves must teach the reading skills needed for their particular areas if students are to get the help they need.

The concept of teaching reading in the content areas of the secondary school is generally accepted by reading specialists. However, the teachers of content area classes must accept the concept if they are in fact to teach the reading skills in their classes. Therefore, the attitudes of content area teachers are vital to the development of total school approaches to developmental reading in the secondary school.

At the 1968 annual meeting of the National Reading Conference, Otto and Smith (3) reported the results of an inventory of junior and senior high school teachers' attitudes toward teaching reading in the content areas. The study was done to learn as much as possible about secondary school teachers' attitudes toward incorporating the teaching of reading into their content area classes. Although the data were collected from teachers in a neighboring school system, it was hoped that the information provided in that study could be used to further the development of total school approaches to developmental reading in the Madison, Wisconsin, secondary schools.

A specially constructed attitude inventory employed by Otto and Smith proved to have a high reliability (.83 when used with junior high school teachers and .91 when used with senior high school teachers.) From the analysis of the responses of the teachers to this inventory, Otto and Smith concluded the following: (1) secondary school teachers generally recognize the need for continuation of reading instruction at both the junior and senior high school levels; (2) many secondary school teachers are willing to accept the responsibility for teaching the special skills required in their content areas, but they feel that they need more training if they are to do the job.

If these two conclusions are valid, reading specialists can begin to worry less about selling secondary teachers on recognizing and accepting the responsibility for teaching reading and get on with the task of helping them develop the requisite skills. However, the authors cautioned that their observations were based upon the responses of 87 teachers from a single school system and pointed out the need for further study.

PURPOSE

The present study is a continuation of the previous report. The same attitude inventory was used. However, the attitudes of seventh, eighth and ninth grade teachers were studied, and the sample of teachers was drawn from five junior high schools in the Madison, Wisconsin, system. A total group of 90 junior high school teachers, which comprised all of the mathematics, social studies, English, and science teachers in the five Madison schools, responded to the attitude inventory. Answers to the following questions were sought:

1. Will the attitude inventory developed for the Otto-Smith study retain its high reliability with a different group of subjects?
2. Will the attitudes of the junior high school teachers in the Madison system be similar to the attitudes of the teachers sampled in the Otto-Smith study?
3. Will there be differences in the responses of teachers from the different content areas represented?
4. Will there be differences in the responses of teachers exposed to different kinds of in-service experiences regarding the teaching of reading in the content areas?

ATTITUDE INVENTORY

The attitude inventory used in the study contains fourteen items, seven positive and seven negative, arranged in a Likert-type format as described by Edwards (2, p. 151). In the Likert Model respondents are asked to choose one of the following as a response to an item statement: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree. A priori weights of one integer difference are assigned in descending order to the responses for positive items; and in ascending order to the same responses for negative items; thus, a total score can be obtained for the entire inventory, with a high score reflecting a more positive attitude than a low score.

The fourteen item inventory is given in the schema that follows. The intent was to include items that would get at teachers' perceptions of (a) their personal role in teaching reading in the content areas, (b) the role of the reading specialist at the secondary level, (c) their personal preparation and ability to teach reading and (d) the actual task of teaching reading skills. (e.g., that it is an enjoyable or distasteful task). Weights of 5, 4, 3, 2, 1 were assigned *a priori* to the response choices for the positive items (items 2, 3, 4, 9, 11, 13, and 14) and weights of 1, 2, 3, 4, 5 were assigned *a priori* to the same choices for the negative items (items 1, 5, 6, 7, 8, 10, and 12.) Therefore, total scores could range from 14 to 70.

1. In the secondary school the teaching of reading should be the responsibility of reading teachers only.
2. Secondary school teachers can teach reading effectively without special university courses in methods of teaching reading.
3. The teaching of reading skills can be incorporated into content area courses without interfering with the major objectives of those courses.
4. Any secondary school teacher who assigns reading should teach his or her students how to read what is assigned.
5. With rare exceptions students should know what there is to know about reading before they are permitted to leave the elementary school.
6. Only remedial reading should be necessary in the secondary school, and that should be done by remedial reading teachers in special classes.
7. Teaching reading is a technical process that secondary teachers generally know nothing about.
8. Secondary school teachers cannot teach reading without special material designed for that purpose.
9. Teaching reading is a necessary and legitimate part of teaching any content course in the secondary school.
10. Teaching reading takes all the fun out of teaching at the secondary school level.
11. Every secondary school teacher should be a teacher of reading.
12. At the secondary school level, students want to learn content, not how to read.
13. Integrating the teaching of reading with the teaching of specific content can be as exciting for the content area teacher as teaching content only.
14. Content area teachers in the secondary school are probably more competent to teach the reading skills needed for their subjects than special reading teachers.

INSTRUMENT RELIABILITY

The generalized Item Analysis Computer Program (GITAP) developed by Baker (1) was used to obtain a reliability estimate for the inventory. GITAP yields, among other things, an internal consistency reliability coefficient for the instrument by means of Hoyt's Analysis of Variance Method. The reliability coefficient produced by the program using the responses of the ninety Madison teachers who participated in the study was .84.

TEACHERS IN DIFFERENT SCHOOL SYSTEMS

One purpose of the present study was to determine whether or not the attitudes of the sample of junior high school teachers in the Madison system were different from those of the same of junior high school teachers who participated in the Otto-Smith study. Table 1 shows the mean scores, standard deviations and ranges for the Madison teachers and the teachers in the Otto-Smith study. Table 1 shows the mean scores, standard deviations and ranges for the Madison teachers and the teachers in the Otto-Smith study. Table 1 also shows the reliability coefficient produced by GITAP from an analysis of the responses of each group of teachers.

TABLE 1

Means, Standard Deviations and Ranges for Madison Teachers and Other Teachers

		$\bar{X}$	S.D.	Range	Instrument Reliability
Madison Teachers	N=90	46.07	8:83	19-66	.84
Other Teachers	N=49	41.9	9.39	22-65	.83

It is apparent from Table 1 that the attitude inventory was as reliable when used with the Madison teachers as it was with teachers from another system. The information in Table 1 also shows that the Madison teachers who had been offered various in-service experiences regarding the teaching of reading in the content areas over a period of two years expressed more positive attitudes than the other teachers who did not have the same in-service experiences. A T test was applied to the two sets of data, and it was found that the Madison teachers' attitudes were more positive than the other teachers' attitudes at the .01 level of significance.

TEACHERS IN DIFFERENT CONTENT AREAS

Another purpose of the present study was to determine whether or not there were differences in attitudes among teachers in the four content areas included in the study. Table 2 shows the median scores and ranges for the teachers according to the content areas represented. It was felt that median scores would be more meaningful than mean scores because of the small N's. Table 2 also shows the reliability coefficient produced by GITAP from an analysis of the responses of each group of teachers.

TABLE 2

Medians and Ranges for Teachers in Four Content Areas

		Median	Range	Instrument Reliability
English	N=22	51	32-66	.81
Social Studies	N=27	47	28-59	.89
Math	N=23	46	26-60	.77
Science	N=18	43	19-60	.84

The data summarized in Table 2 show that there were differences in the attitudes of teachers in the different content areas. The English teachers expressed the most positive attitudes and the science teachers the least positive. Any score above 42 reflects a general attitude on the positive side of the scale. Therefore, it should be noted that for none of the groups does the median score reflect a negative attitude.

TEACHERS IN DIFFERENT SCHOOLS

Another purpose of the present study was to determine whether or not teachers' attitudes differed among schools that had provided different kinds and different amounts of reading in-service experiences for content area teachers. To satisfy this purpose the responses of the 90 participating teachers were analyzed according to the five schools in which they were taught. The experiences provided in the different schools are shown in the following schema:

School	In-Service Experience
1	The services of a reading consultant assigned to the school full time with no other responsibility than to help content area teachers incorporate the teaching of reading into their classes. The consultant had been employed for one school year when data for the present study were collected.
2	A one-half day in-service program presented to all content area teachers to acquaint them with specific instructional reading practices they might incorporate into their teaching. The in-service program was presented by central office

reading consultants and followed by visits from the same central office consultants to teachers who requested additional information and demonstrations.

3 One after-school meeting of four central office reading consultants and content area teachers in the departments of English, science, math and social studies. One consultant met with the teachers from each department for approximately one hour to discuss teaching reading in that content area. This meeting was followed by visits from the same central office consultants to teachers who requested additional information and demonstrations.

4 Visits by central office consultants to teachers who requested help or who agreed to permit central office consultants to discuss good reading practices with their students. These consultant services were requested or permitted almost exclusively within the English department.

5 Relatively little consultant help of any kind.

One factor which should be noted is that evening in-service classes regarding developmental reading in the secondary school were available to all Madison junior high school teachers. Central office reading consultants taught the classes and teachers earned professional advancement credits for attending. These classes were largely concerned with discussing total-school approaches to developmental reading and teaching reading in the content area. No records are available to show what percentage of teachers from each of the five schools attended; however, it is believed that the classes attracted approximately equal number of teachers from each of the five schools.

Table 3 shows the median scores and ranges of the participating teachers in each of the five junior high schools. The reliability coefficients produced by GITAP from an analysis of the responses of the teachers from each school are shown.

TABLE 3

Medians and Ranges for Teachers in Five Schools

School		Median	Range	Instrument Reliability
1	N=23	52	23-60	.81
2	N=15	51	38-60	.65
3	N=21	45	19-58	.85
4	N=17	46	33-66	.82
5	N=14	40	23-59	.83

DISCUSSION

The present study was done to obtain more information about an area that has had relatively little investigation: the attitudes of secondary school teachers toward teaching reading in their subject matter classes. The findings of this study regarding the effects of various factors influencing teachers' attitudes are not offered as conclusive evidence. They are rather presented as indications of what appear to be trends and, therefore, as guidelines for further investigation.

The attitude inventory developed by Otto and Smith appears to be a useful instrument. An examination of the reliability coefficients produced by GITAP from responses from different groups of teachers indicates that the reliability of the instrument is consistently high. The inventory, therefore, promises to be a dependable tool for assessing the state of secondary school teachers' attitudes toward teaching reading in their content areas. It might profitably be used in secondary schools before beginning reading in-service programs with content area teachers to find their current attitudinal state. It might also be used after in-service programs to evaluate the effectiveness of the programs in changing attitudes.

The findings of this study regarding the differences in attitudes between Madison teachers and teachers from another system must be viewed with caution. Although the Madison teachers had more positive attitudes, it would be incorrect to conclude that the in-service experiences given the Madison teachers caused the difference. Too many other variables were uncontrolled, and the samples were small. However, it is encouraging to further research that the significant differences did exist in favor of teachers in the school system that had been conducting in-service programs to change teacher attitudes. The findings of the present study urge a close investigation of the effects of in-service experiences on the attitudes of content area teachers.

As expected, the English teachers expressed more positive attitudes toward teaching reading in their classes than the teachers in the other three content areas. It is noteworthy that the consultants who conducted the in-service experience which were given to the participating teachers than other teachers during the early stages of an in-service program. Perhaps English teachers resent the attempts of reading consultants to convince them that they should teach reading when they are already convinced. The manifestation of this resentment might be misinterpreted as a display of negative attitudes when in fact it is related to well established positive attitudes. The findings of the present study indicate that there are differences in the prevailing attitudes of teachers in different content areas. Reading consultants should be aware of these differences among teachers and spend more time working to change attitudes with some teachers than with others.

The findings of differences in attitudes among teachers in schools that had been presented different in-service experiences is not conclusive evidence that the in-service experiences they received are solely responsible for the differences. However the finding that attitudes may be influenced more by some kinds of in-service experiences than by others. The task remains to conduct further research that will show more clearly the relative effects of specific kinds of in-service programs on the attitudes of content area teachers.

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Evaluating a Content Reading Program for an Inner City High School

Gary D. Spencer
Jersey City State College

As you have heard from Dr. Weiss some of the more important goals were more philosophical than instructional in trying to implement a reading improvement program for an urban ghetto high school situation. This paper will attempt to evaluate the progress made in reaching these philosophic goals, as well as a more concrete evaluation of the student population.

From the beginning of this project it was felt that the typical objective evaluation of reading skills by use of standardized tests would add little to the understanding of the instructional problems in a ghetto high school. Therefore some different means of evaluation were deemed necessary. As you have heard the goals were to help teachers be more effective by helping them to understand behavioral, attitudinal, and academic problems of their students. Specifically this meant helping teachers *cope* with the wide range of abilities within the classroom including the lack of reading skills, lack of motivation, lack of educational experiences, social and educational pressures, lack of adequate language development, poor health, and lack of perceptual skills, and intelligence levels necessary for normal classroom activities. It also meant that instructional materials desired by the 17 participating teachers would be purchased and on hand as quickly as possible.

I. *Changes in attitudes and educational philosophy of students, teachers, and administration.*

A. *Students*

Prior to the project there was poor motivation of students to attend school regularly, to participate in classroom activities while there, or to respond to educational materials used at school or at home. They also did not participate in school extra-curricula activities to any extent.

Evaluation: There was no change in attendance performance of the students with the absenteeism remaining at the 40-45 percent level daily with an average absenteeism per week remaining at 2 days except for 1st period classes where both figures were 10-15 percent higher. There were a few instances when the closed circuit television was being used and the attendance for the day would be close to 100%.

The participation of youngsters in extra-curricula and classroom activities remained about the same excepting some incidental and rather insignificant interests in some special units such as a unit on

Black awareness or use of special or new A-V approaches. These approaches were rather incidental to the overall relevance of trying to change attitudes or motivations of these youngsters. Reasonably one might expect this part of the project to show least signs of progress in view of the long term and deep-seated frustrations most of these youngsters have had in and toward school experiences.

B. *Teachers*

Prior to the project: Most teachers in the school were white contrasted with a 95% Black student population. Most teachers had been in the school for many years, and had watched the student population change from mostly middle class white to a mostly lower economic Black student population. As the problems became more critical the teachers retreated into their own shells and eventually became automatons going through the motions of trying to teach. Most teachers literally had given up trying to accomplish anything except with the above-average student. This was rationalized in many ways from saying, "the elementary schools were not doing their job" and "these kids didn't belong in high school anyway" to "get them here and I'll teach them."

Evaluation: There were a few concerned teachers (mostly young or new teachers) who attempted to correct the problems that were apparent, and who were willing to accept any help that was available. The majority of teachers involved either gave lip service to trying out new innovations or actually refused to cooperate by raising all kinds of objections until the safety of the summer break arrived. All attempts at having after school released time for consultation or in-service training was thwarted by requests for additional pay for such time. There was little encouragement from the local administration to support efforts to change instructional procedures by the teachers (and a suspicion that many efforts were being sabotaged by the administration.) Thus the goal of changing teachers' attitudes and motivation was not realized during the evaluation period other than the pseudo-activities that appeared to be steps in the direction that was desirable by the outside consultants, but in reality were not actually wanted. This attitude was in spite of a large amount of evidence as to what kind of student population was in attendance at Central High School and what the major problems were.

C. *Administration*

Prior to project: The administrative structure at the high school was rather rigid and quite political with most decisions coming from the district administrative officers and passed along to the local unit officers, then to department heads and finally to the teachers. All instructional, clerical, and administrative decisions from textbook selections to scope and sequence of courses are decided at the top with no participation by the classroom teachers. This fact caused tremendous problems in trying to make any changes at all as each teacher could make no decisions without approval from above. With Bell Telephone's participation in the project, the district administration felt obliged to become involved in the project, and recommended that Central High School would be the logical choice to try out new ideas. The high school administration then called in the department heads and indicated which ones would be involved. After the team from Jersey City State had met with the department heads, it was felt that we should work only with the faculty who wanted to be involved.

Evaluation: We found that not only were certain department heads told to cooperate but they also volunteered for certain faculty in each department. These faculty members were told, not asked, to be involved in the project. It was several months later, to our dismay, when several teachers not only did not want to be a part of the project but were not allowed to resign when this came to light. Others who wished to be involved were told by the high school administration to mind their own business and keep quiet. As the project proceeded it became more apparent that the only cooperation we were to receive would be in the form of lip-services. We had incidents where tests were destroyed before any tabulation could be made. Books and materials were lost or left in such places as to be stolen or destroyed. All meetings with department heads or teachers were with reluctance or complaints, or where teachers were somewhat cooperative the department head or higher administrators would deliberately sabotage the immediate goals by complaining to the consultant or project coordinator, or to the Jersey Bell Telephone representative, thus causing more delay and frustration. When actions became quite direct towards circumventing these delaying actions, then the administration would always become angry and indicate that this was not a proper objective of the project, and that the consultants were not aware of the problems, etc. Thus little or no change in educational philosophy or motivation by the administration was noted although much lip-service for faculty and public consumption was evident.

II. *Objective measurements of students and teaching materials, and opinions of faculty, administration and consultants.*

A. An attempt to administer informal and formal reading tests in each major content area was decided upon. This would be done to determine not only reading levels, but also to illustrate the need for meeting the wide range of educational needs that each content area contained. It was felt that this procedure would illustrate vividly to the individual teachers what was needed, but would also focus attention on the inadequacy of the materials and techniques then in use. The content areas tested in this manner were mathematics, English, general science, and social studies. Opinions were also sampled in order to determine on a seven-point scale how much variance there

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was among teachers, administrators and consultants regarding beliefs about students, teachers, school plant and materials, and administrative procedures. As each of these questionnaires was quite long only the essential information will be reported.

MEASUREMENT IN THE CONTENT AREAS

English: It was quite obvious from observing the data that there was a general reading retardation in all English classes. Reading levels in each class ranged from approximately 4th grade to 11th grade; these were determined by finding the highest level of graded material in English where a youngster could achieve at a minimum level of 60% of the 10 questions which accompanied each selection. The 10 questions were of main idea, factual, inferential, conclusion, and vocabulary types. A mastery, instructional and frustration level was determined, but only the instructional level was used. The averages for English I, II, III, (9, 10, 11th grades) were as follows:

English I	**English II**	**English III**
N = 181	N = 72	N = 27
Avg. Gr. Level – 7.0	Avg. Gr. Level – 6.1	Avg. Gr. Level – 6.6
Range 3.0 – 11.0	Range 4.0 – 11.5	Range 4.0 – 12.0

It was obvious that the traditional texts for the 9th, 10th, and 11th grades would not be appropriate for these classes, but it becomes even more of a problem to realize that the majority of the comprehension questions that were missed were of the "Inferential" and "Conclusion" type, and those rarely missed were of the "Factual" type.

This important observation led to an additional score in the mathematics content area with some interesting results.

Mathematics: An attempt to measure factual reading comprehension in the mathematics area was compared with inferential or implied reading comprehension. Thus two scores on each level of the graded informal math selections were obtained, and the highest level of graded materials in mathematics on which a youngster could achieve a minimum of 60% comprehension for factual and for inferential type questions was determined. Both grade level scores are reported here.

Algebra I		**Gen. Math.**		**Bus. Math.**		**Totals**	
N	= 130	N	= 48	N	= 35	N	= 213
Factual Gr. Level	= 9.0	Factual	= 7.8	Factual	= 7.8	Factual	= 7.9
Inferential Gr. Level	= 7.0	Inferential	= 5.8	Inferential	= 6.0	Infer.	= 6.4
Avg.	= 8.0	Avg.	= 6.8	Avg.	= 6.7	Avg.	= 7.1
Range	= 1.0-12.0	Range	= 3.0 11.0	Range	= 3.0 4.0	Range	= 3.0 0.0

It may be noted that there is almost a two-grade level spread between types of reading competency. This was a very relevant factor when deciding what type of material would be most effective in working with these youngsters in the math area. However, the chairman in this area refused to believe that the youngsters were that low, or the materials that inappropriate until readability checks were done on all texts being used with the following results.

Modern Algebra Book I (1)	10.5 avg. reading level
Modern Algebra Book II (2)	10.8 avg. reading level
General Math (3)	8.7 avg. reading level
General Math (6)	8.1 avg. reading level
Business Math (5)	8.8 to 11.0 avg. reading level

Each book had several 100-word samples taken; then Frys Readability graph (4) was used to plot the readability of each. An average was then obtained.

GENERAL SCIENCE AND SOCIAL STUDIES

The science area was tested with a wide-range reading test. A smaller sample of youngsters was tested because of the lack of follow-up and retesting those that were absent. This resulted in a higher grade level range of scores obtained. However, if we use 9.9 as the reading level expectancy there is still a deficiency of 1.7 overall and a reading grade level range of 4.8 to 12.2 which is similar to the results obtained in the other content areas. Formal testing was also done in the social studies area; however, the department chairman *inadvertently destroyed* the results before they could be scored and refused permission for retesting. An informal survey was made, however, and the results are reported below along with the science scores.

General Science

N = 108
Avg. Gr. Level = 8.2
No Scores = 87
Range 4.8-12.2

Social Studies Classes

% of Students Reported

Below Grade Level in Social Studies Vocab. = 51%
Below Grade Level in Comprehension = 78%
Below Grade Level in Reference Skills = 90%
To Be Primarily Word Readers = 20%
Omits Words in Oral Reading = 15%
Ignores Punctuation = 12%
Doesn't Know Letter Sounds = 11%
Had Serious Writing Problems = 50%

AVERAGE SCORES

The average of reading scores of all ninth-grade content areas tested was 7.4, and the expected grade level should have been 9.9; therefore the reading deficit was 2.5 years with an extrapolated inferential reading level of grade 6.4. This evidence points out the obvious lack of textbook materials in the content areas for inner city ghetto high schools such as Central High School in Newark.

B. Opinion Rating Scales

The rating scales were questionnaires in four areas. Opinions of students, opinions of teachers, opinions of plant, equipment, materials and curriculum, and opinions of administration and policies. Samples were taken from several sources including teachers, consultants, and administrators. For each statement on each questionnaire a rating of 1 to 7 had to be made. The questionnaires were collected by groups and the items averaged. A response average of 1 to 2.25 or 5.75 to 7.0 was considered a significant deviation, with 1.0 being low and 7.0 high.

Although many subtle findings can be obtained by specific item analysis they will not be reported here. General findings, however, are as follows:

1. Most consultant opinions were lower in all areas than either teachers or administrators.
2. Most teacher opinions were lower than administrators.
3. Teacher and consultant opinions were similar regarding mental capacity of students, but opposing regarding reading abilities of these students.
4. Consultants though attendance was a major problem while teachers and administrators did not.
5. All were in agreement that teachers taught primarily through lecture and discussion in large groups.
6. Teachers indicated they would like to change but did not know how.
7. Administrators indicated they were satisfied with the status quo: that the school plant is adequate, materials are usable, curriculum is workable, and teachers generally are doing a good job.
8. Teachers felt they are doing a good job but that changes would be necessary. But they were somewhat opposed to new curriculums and definitely felt materials were inadequate, and the school plant hardly usable without renovation. Administrative policies also were considered below average.
9. Consultants generally felt that teaching, school plant, materials, equipment, administrative policies, and curriculum were all poor and rated them as such.

III. *Program Coordination*

In a cooperative project of this kind, that involves industry, higher education, public education, and a school community, it is imperative that philosophical agreement in the purpose of the project be paramount. However even though there is general agreement as to what should be done, how it should be done becomes a crucial and variable question. A well defined line of communication must therefore exist, and a system of priorities must be established between the different parties concerned and within each of them. This type of organization then allows individual initiative without denying others involved theirs. Evaluation of Program Coordination: When trying to evaluate the coordination that existed in this project it becomes evident that much is lacking.

1. With major goals already fixed prior to approaching the public school system, little cooperation or lip service was guaranteed. This was also true when the consultant team tried to establish immediate goals for the school without involving the faculty or administration to any extent.
2. Coordination within the public school system was only in one direction, from the top down. This was a major problem of the program.
3. Coordination between New Jersey Bell and Jersey City State was nebulous and dependent on communication between two people with a resulting lack of understanding of long-range and short-range goals. This was illustrated by the fact that although money was available, the decision to spend money on certain items was prohibited by them. Also changing of major goals was made with little notice to others involved.
4. Coordination within the Jersey City State consultant team was poor due mainly to a lack of communication and lack of understanding long-range goals. Thus the short-range goals were constantly changing. This was complicated by the fact that each consultant went to the high school on different days, and met with different teachers with no joint meetings to firm up common goals. Much confusion resulted with the program director changing immediate goals quite often, and individual consultants having to rely on their own contacts for direction.
5. Articulation between what was attempted and what was successful was poorly done, and at times even withholding of data was expected, showing little concern for others involved in the program.

IV. *Summary*

When trying to summarize this evaluation one must look at the goals intended. "The major goal of helping teachers be more effective by helping them to understand behavioral, attitudinal, motivational, and academic problems of their students."

To evaluate this goal is difficult, as I am sure teachers did already understand the problems. If they did not, then I think we did show that the problems were indeed there and that traditional instructional procedures do not work.

The second major goal of "helping teachers *cope* with the wide range of abilities within the classroom, including lack of reading skills, lack of motivation, lack of educational experience, lack of adequate language develoment, . . ." has to be evaluated as *not effective*. Almost every attempt to help teachers to modify instruction has been thwarted in every way imaginable. Almost all of them can be attributed to the total lack of communication between all involved, and to the lack of concern for the individual child.

V. *Recommendations*

1. That future programs of this sort leave no doubt that the school system wants to be involved in such a project, and that the local faculty be involved in establishing goals. Perhaps industry should ask the public schools what they need help with before entering into the picture; then probably it could be done on a matching funds basis. A commitment to the program by the school district and local teachers is extremely important. Industry should not try to establish or change policy as that can be done only by the schools working with their own.
2. That any consultants called in be allowed freedom to innovate with all the variables known to them. They should have a budget known to them, and little attempt to tamper, coerce, or inhibit them should be inherent in this type of program during its length.
3. In any experiment to cause philosophical or curriculum change, there should be a trial period of an exact-time delineation with the understanding that at the end of the period the experiment shall cease and be evaluated for its future use.
4. The only way in which change becomes real is for it to be useful and usable by and for the classroom teacher, but also for the good of the learner and the community of that learner. Anything less is artificial and will not be accepted.
5. That there should be much effort to establish as many lines of communication as possible, and that these be mutual and interdisciplinary rather than hierarchical in nature. Flow of information must go in all directions freely to generate beneficial changes.

The future of this project, although continuing, is already in doubt, but we have learned much about the urban ghetto high school, and much about ourselves.

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The Dynamics of Motivation in Learning

Jo M. Stanchfield
Occidental College

Today the vision of literacy is the brightest star on our horizon. In a world where 74% of humanity is illiterate, there is no greater need than literacy, the element which lifts man above the animals.

In the field of literacy, motivation is a key word—a golden word, for anyone can learn when he is motivated. Literacy encompasses five major skills—listening, speaking, thinking, reading, and writing—and this paper deals with the dynamics of motivation in learning as it relates to these important skills.

In research over a period of nine years, the writer has found seven basic factors in motivation—different elements, different principles that help to motivate the learner. These principles should be used to teach children to read and write and think and speak, to educate them to take their place in a society which we have created and which offers nothing to the illiterate.

CONTAGION

One of the most significant motivational factors is contagion, or the spread effect in psychology. This is the principle by which everything affects the things it touches for better or for worse. This relates particularly to the classroom; the attitude of teachers or their mental health is more communicable by far than the measles or the mumps. The variable of a teacher's attitude is discussed effectively in a booklet published at the University of Texas called *Creating Climates for Growth.* (1) The foreword of this publication was written by Karl Menninger. He asks why educators are so aloof—so prone to talk about the cognitive or intellectual domain rather than the affective domain, or the area of feelings and emotions. He states, in the words of William James, that at the best, we function 90% in the emotional and affective domain and 10% in the intellectual. Thus, the emotional or mental health of teachers and administrators is tremendously important. Many educators have long been aware of the effect of the attitude of teachers on the behavior of children. In studies sponsored by the federal government in the teaching of first grade reading, investigators found that the teacher and how he felt about reading methods and materials were more important than the actual methods and materials. (2) So it goes back to the teacher and the factor of contagion—the excitement for learning, the love and respect he shows for his pupils and for the reading act. You can't fool children—they know when you're angry, irritated, or downcast. Feelings, whether positive or negative, are contagious.

Two years ago, the writer asked over a hundred first graders, "How do you know your teacher likes to teach you?" Out of twenty categorized responses, the word "smile" appeared in seventeen. The children said, "She smiles at me. She puts her arm around my shoulder and she smiles at me." "She looks me straight in the eye and she smiles at me." "She smiles at me and she calls me by my name." One particularly bombastic little boy said, "Gosh, she even looks glad and smiles when I come into the room in the morning!" A smile is a very contagious thing, and children seem to interpret this as acceptance from their teacher; it gives them a feeling of self-worth.

In this area of contagion, the teacher is the most important facet in the entire learning situation. We must learn to control anger and irritability and train our subconscious to respond with understanding, acceptance, and humor, for our students absorb our feelings and attitudes and reflect them. A study from the University of Wisconsin, in first grade reading, showed that first-grade children who had good mental health, who felt good about themselves and the school situation, learned to read more effectively and achieved significantly more on the Gates Reading Test. (3) Thus the teacher with good mental health can help to give children the gift of literacy. If we give them laughter, love, understanding, and kindness, we will also help to give them the greatest gift of literacy, which opens for them all doors.

David Ryans, formerly at the University of California at Los Angeles, studied effective teacher characteristics for thirteen years. His research covered every variable and all levels of instruction. He found that there were three factors that were always positively correlated with good teaching—warmth, enthusiasm, and organization. (4) The first factor, warmth, is actually love expressed. From research with children over a period of nine years, the writer firmly believes that most of our "disadvantaged learners" are never going to learn to read unless the teacher loves them into learning. I refer to the quality of love as expressed by Erich Fromm in *The Art of Loving*—love as a kind of listening concern for another human being, when one cares enough to listen, and then goes on caring enough to do something about the person's problem. (5) This strong, vigorous quality is needed to teach the two-thirds of our student population that have never been taught effectively, particularly those whose hearts are filled with hatred and hostility for school and educators.

The second factor in effective teaching is enthusiasm. Emerson once said that nothing great or everlasting can be accounted for except by enthusiasm and inspiration. You can teach almost anyone anything if you get enthusiastic about it. With the element of contagion, your enthusiasm rubs off on the one you are teaching. And how do you get this magic enthusiasm? How do you renew purpose and meaning and excitement in your life? Sociologists, who work with groups and know group relationships, say, "Associate with people who are excited about something, no matter what it is–rock collecting, skiing, walking on the beach–but associate with someone who has some feeling or enthusiasm about what they are doing and it will rub off on you."

Ryans found that the third factor in effective teaching is organization. The organized teacher teaches. Even if a poor method is used, any method is better than teaching "off the cuff."

EFFECTANCE

The second factor in the dynamics of motivation in learning is effectance. Effectance is the ability of an organism to deal effectively with a task. This is a special word coined by J. J. White, who said that the more successful a learner is, the more successful he is going to become. Expressed another way, success brings about more success and failure, more failure. Effectance in one task stirs within the learner the will to try another task. In the teaching of reading we must insure success by teaching each skill effectively at one level before going on to the next higher level. In practice, we often throw children into book reading before they know their letters and accompanying sounds. Some slow pupils may need fifty practice experiences to learn the letters of the alphabet and the sounds they represent. We must, therefore, teach and give practice in the skill taught. If necessary, we must reteach, give practice, and reinforce each skill until finally the student achieves mastery. It is better to give five things and have the student achieve mastery than to cover an entire area and leave students with a sense of frustration and failure.

The teachers in the writer's research used five devices to direct pupils' attention to the learning task and to help them achieve mastery. These five spurs to learning all provide individual responses so the teachers can check for "effectance."

1. Individual chalkboards. These are called "mini-boards," in keeping with current expressions. They are small cardboards painted with chalkboard paint. Every time that a word analysis skill is taught–consonant substitution, blends, long vowels, for example–every child follows the drill at his seat, writing everything the teacher writes and checking his work with the teacher's.
2. Individual acetate slates (mini-slates). These are small cardboards covered with acetate. The children write on them with black crayons or grease pencils. This is a different response, esthetically, kinesthetically, and tactically.
3. Individual pocket charts (mini-charts). These are similar to the large pocket chart used by the teacher. They are cardboard backing with three or four pockets made of folded masking tape. The children are given duplicated sheets printed with

words containing the skill they are studying. (At the upper grade levels they can write their own words.) Then they cut up the words and put them back together again on their pocket charts. For example, if one is teaching blends, the words are cut to separate the blend from the phonogram. Children see the whole word, the parts, and the whole again. After using this device, a non-reader will be heard saying, "Oh, now I see. Letters have sounds. You put them together and they make words. You put the words together and they make sentences." This drill also is an excellent lesson in following directions and in organization. Children may keep the words in little envelopes which they attach to the boards with clips.

4. Individual flannel boards (mini-flannel boards). Again cardboard backing is used, covered with green flannel to resemble the teacher's large flannel board. And again the children follow the teacher's drill at their seats, putting words together and taking them apart.
5. Colored wick or felt pens. This requires another different behavioral response, and is tremendously effective in motivating children.

These teaching devices require positive, individual responses and behavioral involvement which are essential in teaching children to read. The variety is particularly important for boys, who have a very low tolerance for frustration and boredom. They must be given something different to do every day, to keep them excited and full of anticipation for what they are going to do next.

EXPECTANCY

One of the greatest factors in the motivation of learning is expectancy. This is a principle that teachers can, and should, practice every day. An important part of expectancy is exemplified by the teacher who looks into a pupil's eyes and says, "You can do it. I know you can do it. I want you to do it; will you try to do it?" A student needs to feel that his teacher cares whether he learns or not and expects him to achieve. A teacher's expectancy of pupils becomes self-fulfilling.

A significant research study was made in this area by Parsons at the University of Southern California. In the research classes, he changed the I.Q. records of students, without the teacher's knowledge, so that the average and the slow were given higher I.Q.'s and the brighter students were given lower ratings. At the end of the year he found that the average-to-slow students, whose I.Q.'s had been changed, had made the highest grades, participated the most in school, and had been generally the most outstanding. Parsons came to the conclusion that what the teacher tends to expect from his students, he gets. (6)

Another important study on expectancy was done by Dr. Robert Rosenthal in South San Francisco and published in his book, *Pygmalion in the Classroom.* (7) Rosenthal told various teachers that certain pupils in their classes (which he had selected at random) had been identified on "tests of inflected acquisition" and could be considered "potential spurters." When these children were tested at the end of the year, they had, indeed, "spurted," largely because their teacher had expected them to.

INTEREST

The fourth factor or principle in motivation in learning is interest. This factor is dynamic, projective, and propulsive. We all tend to do best the things we're interested in. When teaching boys to read, this is a critical factor. Boys have a smaller range of reading interests than girls, and it is difficult to motivate them to read unless the subject matter is interesting to them. The writer's research on boys' reading interests rated fifty categories of reading interests in order of preference. The top three categories were outdoor life, explorations and expeditions, and sports and games. The least-liked categories were plays, family and home life, and poetry. Characteristics of reading interests were also studied. Out of a total of twenty characteristics, the top three were unusual experiences, excitement, and suspense. In research that followed, high-interest, boy-oriented materials were developed and tested, and it was found that if a child's interest is captured and held, he can readily learn to read.

RELEVANCE

The fifth element in the dynamics of motivation is that of relevance, the meaning and relationship of school life to the life that's lived by the student. It concerns the blending of meaning between school and home life. Relevance is a key factor in educating the disadvantaged. It has been said that these children have no background. They do, indeed, have a background—a rich, varied, exciting, intense background, which they bring to school. It's just that educators don't understand or use that background, and therefore the curriculum tends to lose relevance to their lives.

Teachers try to teach beginning reading to children in the ghetto with stories about white children and a father going off to work with a briefcase. It would be easier and more meaningful to teach them about the man in the moon, because that is what they see on television. These children don't understand or identify with what teachers talk about; it does not relate to their background. To make things relevant for them, the teacher must get right down to the facts of life. At the younger grade levels, games, which are now being called "simulation techniques" are an excellent way to make learning relevant to children. At upper grade levels, students can learn a wide variety of subjects through games. Any game in Hoyle's book can be put on cards using words which illustrate the skill being taught. In the inner-city schools, if you ask boys what they want to do, they'll tell you—play dice, "shoot craps," and play poker. To make learning relevant, they can be taught word analysis skills with "Word Dice" and "Word Poker." They catch on immediately to what the language is and how it goes together.

The principle of relevance can be applied in other areas at upper grade levels. What do these young people need to read or want to read? A driver's license application or a job application. A newspaper, to find out where a certain movie is playing, or a television guide to locate their favorite program. Television, itself, is an excellent way to make the curriculum more relevant. It is the greatest teaching medium in the world. Federal government studies show that 99% of the impoverished families have television and children look at it four to five hours a day. A publication called *The Teacher's Guide to Television* lists programs four to six months in advance, so that homework assignments can be made—assignments which are relevant to today's society. (8)

Listening tapes provide another relevant learning situation. The Michigan Audio-Visual Society sponsors *Pupils Speak to Pupils*, with information on how to make a tape and how to ship it to a "tape pal." (9) A list of addresses is provided, of students in the fifty states and in other countries. This is a wonderful opportunity for communication when young people can't read or write—and a wonderful chance for oral conversation to lead into written conversation.

INVOLVEMENT

The sixth factor in the dynamics of motivation in learning is involvement. This is a tremendously important factor in learning. Our schools are far too teacher-directed; there is much verbalization but little real communication or real meaning. There must be individual physical, active involvement and participation.

The research of Krech at the University of California is interesting, with regard to involvement. (10) Dr. Krech and other psychologists experimented with the injection of protein enzymes into the brains of rats. They wanted to learn if this would stimulate growth of brain cells and produce more intelligent animals. Over a period of time, they learned that these rats had, in fact, grown larger and heavier brains. The next step in the research was to learn how the human brain could be stimulated without such drastic recourse as injection of enzymes. So over a period of nine years they experimented with involvement and activity. The experimental rats were given a variety of things to do—routines to go through every day. They were given an opportunity for exploring and experiencing new things. They were also given individual attention by petting them and talking to them. The results of this research have significant implications for teachers because it was found that through involvement and activity, the brains of the experimental rats had grown bigger and heavier.

In the classroom, the positive effect of involvement can be demonstrated in many ways. In the writer's research, teachers developed the mini-chalkboards, pocket charts, slates, and flannel boards to teach vocabulary skills with individual, physical, behavioral involvement.

Games, as discussed before, are also important in this area of active, physical participation. In the research, six basic structures of games were used which related to the pre-primers and primer. The games came right out of the stories. For example, one which was used with the books about Hawaii was an action game. The children were given little tickets—airplane tickets. When they recognized and said words correctly, they were given a ticket to get on the plane; they proceeded in the next steps of the game to continue their trip and finally arrive in Hawaii. The children became so involved that some of them asked, at the end of the lesson, "Are we still in Hawaii, or have we got back yet?" When children become that involved in vicarious experiences, the teacher knows he has made the lesson come alive for them.

Involvement through puppets is another incentive to learning. Puppetry, at upper grade levels, can be a [illegible] sophisticated form of telling stories. Simple, paper-bag puppets or sock puppets can be used to teach nursery rhymes and the letter sounds of the alphabet. In the research classes, the teachers used a paper-bag puppet for every letter and a verse to go with it, like "Hank the Hippo is horribly cranky. He honks and he honks and he honks in his hanky." The children wrote some of the verses themselves. Children can do incredibly difficult tasks when they become involved in exciting activities. When teachers get their children involved with things that are fun, learning proceeds by leaps and bounds.

ATTITUDE — SET

The last area in the dynamics of motivation deals with attitude and set—psychological set or the way a person feels when approaching any situation. This, indeed, may be the most important element of all. If children bring to the classroom nothing but anger, hate, hostility, and disinterest, it is impossible to teach them to read or to write or to learn. If pupils don't feel good about reading and wanting to learn, there is not much a teacher can do about it unless he can change these attitudes.

Research from the American Medical Association by Dr. Kirsch, studying children in the schools of Chicago, revealed that there were two factors above all which were predictors of success in school. (11) The first was a sense of worth. If a child has the feeling that he is a failure and the school experience has been a mirror to reflect his failure, then his learning is completely negative. He has learned that he has little or no worth, that he can't learn, that his teachers have no use for him. He has learned to hate school, to hate the establishment, and to hate teachers. He has learned this very well and it's difficult to overturn this. Teachers must be big enough to change these attitudes by showing children that they care about them. Every great charismatic teacher must care about his students. We must remember this anonymous quotation, "The greatest and most unforgettable teacher that I've ever had is not the one who was so dedicated to textbooks and textbook materials that he forgot the students for whom the textbooks were written. No. He learned to put first things first, and first he was dedicated to find knowledge and to express it. Then he loved his students with the kind of warmth that is so essential to release their potential."

Closely related to this is the second factor in set, according to Dr. Kirsch, which is the sense of belonging in a group. In some of our schools there are children who have no friends; they're not a part of a peer group; they feel they don't belong to anything. They can't do anything in school and nobody cares about them. Children must have a feeling of worth and a sense of belonging in order to achieve in school. How do they get it? Many times only through their teachers.

An excellent reading assignment for teachers in a study group would be *The Art of Loving* by Erich Fromm. (5) All teachers should practice this art, because love, as a kind of listening concern for the learner, does, indeed, change his attitude. Why did Erich Fromm call his book *The Art of Loving?* Why did he not call it the practice of love, or the worth of love, or what love will get you? Is he perhaps implying that love is such a high art that it is to be placed with all the other arts, with music, with painting, with sculpture, with writing? Is he also implying that those who try to practice the art of loving have to work at it, just as hard and long as any artist? Is it not a fact that those who try to practice the art of loving do it in a uniquely creative and different way, just as no artist paints the same way or no musician plays music the same way—do they not have a unique, miraculous style as they practice the art of loving in their daily lives? And when teachers practice an art day in and day out, do they not also end up with a product? Teachers see this product in the changed attitudes of their students, their shining eyes, and their increased achievement.

We, who work in literacy, are the hope of our civilized society at all levels. Sometimes the challenges are great and the way is so rough that individuals are tempted to give it all up. The efforts of one person seem futile and hopeless. But Nathan Hale pointed out to all of us our own importance when he said, "I am only one, but I am one. I cannot do everything, but I can do something. What I can do, I ought to do, and what I ought to do, by the grace of God, I will do!"

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Reading Improvement Program for College Students

Elneita Wallace Stewart
Texas Southern University

The three-pronged reading program at Texas Southern University is corrective, remedial, and developmental in content and methodology. Seventy percent of the enrollment is comprised of freshman students whose equivalent reading grade-scores on the Nelson-Denny Reading Text usually range from 7.0 to 13.0 with a heavy concentration of scores between grades 7.0 and 9.0. The mean reading-grade score for freshman students who enrolled in September, 1969 was 9.0. The mean score on the American College Test for the same group was 11.2, which is 6.8 points below the mean of 18 for students in the Texas Colleges who participated in the program in 1968.

As of November, 1969, ten percent of the non-freshman enrollees are either on or threateningly close to academic probation. The remaining 20 percent are either self-referred students who are interested in improving their rate of reading, or ones enrolled in a reading course that is required for student teachers, or those who have been referred to the Reading and Study Skills Center by their professors.

The instructional procedures that are used in the program are based on the learning-theory concept of diagnosis and relevant treatment. In addition to the *Nelson-Denny Reading Test,* the *Davis Reading Test, Iowa Silent Reading Test,* The *Large Thorndike Intelligence Test,* Non-verbal form, Level V are sometimes used. The results of standardized tests are augmented by scores from informal spelling tests, taped reading of short passages and excerpts from plays, and pronunciaton of parts of word lists such as the Thonssen-Gilkinson Word Test. (7)

An analysis of data gathered by informal testing often reveals that a large number of freshman students operate from a limited conceptual base and that there are many individual and collective voids in their experiential backgrounds. Whether the causation is due to limited cultural stimuli, low socio-economic status, poor educational opportunities, or a combination of these and other factors, has not been assessed at this time.

Responsive to the reading needs of the population just described, the objectives of the program are to help students a) develop proficiency in academic language and build a preventive for fail-out and b) develop high-level comprehension, critical reading, and organizational and study skills. In addition, the program is designed to explore promising methods, materials, and techniques for teaching students who manifest the same reading behavior that is characteristic of students at Texas Southern University.

The learning activities described in this paper omit reference to reading practice manuals hardware, and some of the 'shot-gun' approaches that are also admittedly used in the program. Instead, a description is given of reading materials and activities which a) present strategic vocabulary in a variety of contextual settings, b) are appropriate in level of difficulty for these students, c) are designed to foster over-all growth in reading skills, and d) are potentially rich for broadening a student's conceptual base of operations and closing some of the gaps in his experiential background. The program has credible support in learning theory although it is still in search of a more functional model.

CURRENT NEWS

Educational as well as regular editions of newspapers are used in the reading program to a) increase reading ability by making use of the student's immediate interests, b) practice skimming skills to answer five-w types of questions, c) increase vocabulary, particularly by using context clues, d) read objectively, analytically, and critically by comparing reportorial treatment of news items by two or more newspapers, e) understand news language, f) understand slanted reporting, g) realize the power of printed word in swaying opinions, h) report news and discuss lively issues, i) strengthen self-concepts by developing confidence in one's ability to read and interpret complex news items and editorial cartoons, j) become better informed on current issues, and k) develop functional reading of graphic and nonverbal information. Since some textbooks that many students use in their courses are crammed with facts and details, tables, diagrams and charts, practice designed to develop the reading skills that such materials require, can occur while reading pertinent current news.

Materials and Methods: The newspapers now in use in the program are the *Houston Post*, *The Houston Chronicle*, *The Des Moines Register* and *Tribune*, and *The New York Times*.

Students are sometimes urged to find and read articles in which they are interested. On occasion, specific articles are assigned to individuals or groups. Students are asked either to a) share the article with the group, b) write a summary statement or main idea, or c) clip out and explain editorial cartoons. The students' interpretations of editorial cartoons often indicate the degree of their understanding of the issues that are discussed in the news.

MAGAZINES

The educational editions of *Harper's*, *Reader's Digest* and *Saturday Review* are in regular use in certain of the reading classes. *Time*, *Life*, *Look*, *Atlas*, *Ebony*, *Good Housekeeping*, *Esquire*, and *Popular Mechanics* are among the several magazines available to students for use in free and assigned reading. Donors of magazines to the Center are several faculty friends whose reading tastes cover a wide range of interests. In addition to the objectives just enumerated for the use of current news in the reading program, expected outcomes for the use of magazines are to a) understand and appreciate the wide range of information available in magazines, b) enlarge vocabulary through wide reading, c) develop the habit of reading widely, and d) understand and appreciate the importance of research, documentation, and scholarship involved in the preparation of certain types of articles.

Some of the concept-laden terms and figurative language that students met while reading Jeremy Larner's article "Nobody Knows . . . Reflections on the McCarthy Campaign: Part II," are as follows . . . They tended the altar of his unappreciated brilliance and sensitivity. . . . clung like a weasel. . . . people who shared the propensity to grovel. . . . signaled their personal access. . . . blousy ladies' auxiliary ladies. . . . anathema, improvisation" etc. (See *Harper's Magazine*, May, 1969, p. 72).

The inability of some students to interpret the figurative language that is used in some magazine articles and other reading materials often reveals the need to review figures of speech. A set of transparencies taken from master copies on figures of speech that are distributed by the 3M Company is sometimes used in illustrated lectures on figurative and colorful language.

BOOK TALKS

Book Talks are held each nine-week period in most of the classes. The instructor of a reading group displays previews and/or excerpts from a variety of paperback books. The instructor excludes books that any student in a given class has read, and asks student to suggest additional titles that they know of but have not read. The book is chosen by majority vote of members of the respective classes. Some book talks are conducted on close-circuit television and are beamed for viewing in various places on the campus.

Among the books that students chose for recent book talks are *Nigger*, Gregory; *Brave New World*, Huxley; *The Keepers of the House*, Grau; *Soul on Ice*, Cleaver; *Death Be Not Proud*, Gunther; *Go Up for Glory*, Russell; *Shadow and Act*, Ellison; *This Is My Country*, Williams; and *White Man, Listen*, Wright. Students' responses to books are variously interpretational, judgmental, associational, or prescriptive. Depending on the subject content of a book, the discussions alternately generate 'light' and, of course, some 'heat.'

Perhaps one of the unmeasured values that students derive from the semi-structured reading of newspapers, magazines and paperback books is ideational fluency. The book talks serve also to broaden the experiential backgrounds of students.

Some students who meet new vocabulary in paperback books and magazine articles frequently comment on the fact that they often learn additional meanings for these words. In light of this observation, we are placing less stress on presenting words in any isolated form.

SEMINARS

Seminars on techniques for taking examinations are held periodically. Professors representing the several disciplines provide sample test items which are used for illustrations and practice. Illustrated lectures and practice sessions are also given on types of test items that are included in the National Teachers, Graduate Record, Civil Service, Pre-Business, and other such examinations. These sessions are well-attended by upper classmen. The input from feedback given by students who previously attended seminars on taking standardized tests has enabled us to enrich the content of the seminar each year.

Professors in the several disciplines also tape lectures for use in the seminar on taking class notes. Corrective feedback is done through subsequent evaluation of the notes that students take on the lectures.

EXHIBITS

Exhibits and illustrated lectures on tools for effective study include examination and discussion of the following: a) Pamphlets on *Cataloging* and *Indexing Services* and *How to Use Readers' Guide to Periodical Literature* published by the H. W. Wilson Company, b) Thesaurus of Book Digests (3) and other thesauri, c) sample copies of Cliff's Notes, Monarch's Review Notes, Rider's Study Guides, Shaum's Outline Series, d) hand-outs on which the Dewey Decimal System and Library of Congress classification systems are given, e) a variety of samples of materials on techniques of making outlines, preparing a major paper and reviewing a book, f) a variety of types of dictionaries, such as those of music, psychology, art, the theater, familiar quotations, etc.

PLAY READING

Reading-training sessions on closed-circuit television are held to a) enjoy literary [illegible] to provide an avenue for informal self-diagnosis of language and reading needs, c) extend and expand the conceptual base of operations, d) promote growth in vocabulary, e) provide students with a medium for seeing themselves as a second person and examining their self-concepts, f) develop the imagination, and g) get insights into human nature. Moreover, while decoding lines in plays students can extend their understanding of syntax or structure and semantics.

A Raisin in the Sun (2), *Simply Heavenly* (4), and *Ceremonies in Dark Old Men* (1), are three of the plays from which classes have read selected scenes and acts.

INTERDISCIPLINARY EFFORTS

Professors in the Department of History, instructors in classes in world literature and in mathematics have enlisted the cooperation of instructors in the R.S.S.C. program in locating materials that their students can use to improve their study habits and reading skills. The Director of the Center has analyzed sets of textbooks in biology for levels of readability at the request of one of the professors of biology.

EVALUATION

Each semester, a review is made of the pro and post-test reading grade equivalent scores of the various groups of students who have been involved in the program. The mean change has ranged from 2.0-3.5 grade points per semester from 1967 to date.

In an effort to determine the types of teaching procedures that would be most effective for students at Texas Southern University, Stewart (6) conducted an experiment designed to compare the relative effectiveness of cloze and programmed procedures for teaching freshman students. Both comparison groups had modest gain scores in reading achievement, but there was no significant difference in the effectiveness of the two methods. Stewart (5) et al., at the request of Dean Milton Wilson, School of Business at Texas Southern, conducted an experiment to determine whether freshmen students who were exposed to a concentrated reading-improvement program had higher mean quality-point averages the following semester than a similar group that was not exposed to the compressed program. The small difference favoring the students who attended the reading sessions four days per week over a four-week period instead of two clock hours per week, as did the control group, failed to satisfy the test of significance at the 5% level of confidence.

Since many college students improve their ability to learn subject matter when they learn how to study, a well designed long-range experiment to assess the effect of the reading improvement program on the quality-point averages of students who are threatening academic probation, may serve as a means of further evaluation the program.

Since instruction in reading has its direct and indirect aspects and outcomes, it is difficult to measure the effect of instructional procedures by testing reading achievement with the reading tests now available to us.

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A Paradigm of Two Secondary Reading Programs:

(A segment example pattern)

Floyd Sucher
Brigham Young University

This is a descriptive report of a segment of two secondary reading programs. While both programs have broad parameter encompassing remedial reading, regular developmental offerings, and content area reading emphases, only a part of the last phase is presented here.

During the past ten years reading programs in the secondary schools have come of age. Numerous articles have been written and programs have been developed to give direction and content to secondary reading. Many have given excellent descriptions of skill content and others have provided procedures and techniques for presenting the concepts. Like the first child of new parents, much has been learned through experimentation and experience. In the same light with the child walking, we can now begin to devote more effort to productive programs of effective application and less to getting secondary reading on its feet and walking. The paradigms presented below are attempts to implement integrated instruction and application into a total junior high school and senior high school curriculum:

JUNIOR HIGH SCHOOL SKILLS

In March 1967, Betty Sommers and Sue Paxman of Farrer Junior High School in Provo, Utah, began laying the foundations of a junior high school skills program for seventh-grade students. It is best described as a program as its effect reached more than the classroom in which the basic instruction occurred. The course was team taught with the assistance of the school media coordinator. Most of the instruction took place in a large home base room. However, extended periods of as much as three weeks at a time were spent in the media center. The content of the program was built around three major topics: developmental reading skills, study habits and skills, and research skills.

The two areas of study habits and research skills made direct application into all subjects for the student. These two phases were built essentially around what the student was studying in science, social studies, math, etc.

The study habits and skills phase had two objectives: (1) to develop consistently good study habits and (2) to develop those abilities that would help the student get the most from his reading assignments in content subject areas.

During the first two weeks of school the students were introduced to two basic study techniques. The first of these was an assignment schedule for recording assignments for all classes. An abbreviated version of this can be seen in Fgure 1.

FIGURE 1

My Assignment Sheet

Homeroom ____________________ Name ________________________

Date given	Class and Teacher	Explanation	Due	Completed

Assignment Schedule for Junior High School Skills Class

Each assignment was recorded, the class and teacher, date assigned, date due, and whether completed. The schedule was reviewed daily by the teacher during the first several weeks. From these schedules the teachers gave specific instruction in reading in the content areas. Time was devoted in the skills period to regularly assist the students in preparing assignments. Later in the year schedules were examined only on Mondays.

The second technique introduced was a time schedule. Figure 2 shows a sample time schedule.

Initially students were required to keep a complete record of out of school activities. Time schedules were checked regularly. Though the requirement was discontinued after a period, many students continued schedules on their own.

During the early part of the semester content reading skill instruction continued with application and study time being provided. The teachers communicated regularly with content area teachers on the material being covered. Content area teachers recognized and frequently commented on how much better prepared their students were.

Approximately one month after school began the students were instructed in the preparation of reports. This included detailed lessons in locating information, evaluating and selecting information, collecting and organizing data, and preparing a final draft written report. Much of this instruction occurred in the media center. The

FIGURE 2

My Weekly Schedule Week ____________

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
7:00						
8:00						
8:30						
9:20 to 3:50						
4:00						
5:00						
6:00						
7:00						
8:00						
9:00						
10:00						

A Daily Time Utilization Chart designed for Junior High School Skills Class

media center at Farrer Junior High is a model center developed under a Knapp Foundation Project. It contains all forms of media, consequently the students learned to use the typical soft ware resources of books, periodicals, and pamphlets but also learned to use films, filmstrips, recordings, real objects, and resource people.

Following the initial instruction in research techniques, the teachers met with the science and social studies teachers to discuss plans for reports the teachers desired in the content areas. With the direction of the content teacher the students selected a report topic. For the next three weeks the junior high school skills teachers and media coordinator assisted and guided the students in preparing their reports. Most of the class period for this three-week research task was spent in the media center. Students were required to use multiple resources in collecting data. Reports for one group of eighty students cited more than three hundred periodical articles. After completion the reports were presented in the content area classroom.

HIGH SCHOOL CONTENT AREA APPLICATION

Probably one of the most frequently cited algorisms of the reading ability of secondary students is that secondary students' reading abilities are widely spread. Likewise, authorities generally agree that the lower extreme can unlikely be brought to a sufficient level of proficiency in a short time to master the usual reading material provided in the secondary classroom. Yet little has been done to accommodate this wide spread in reading ability or interest. Adjustment to both reading ability and interest by content area teachers was one part of a program developed at a senior high school in southern Utah.

For many years this high school has provided remedial and developmental reading programs for students. Even the most capable students in eleventh and twelfth grade could take a course entitled "College Prep Reading" designed to improve both developmental skills and study skills.

The high school student body was comprised of a large group of Indian students with limited language experience, a variety of transient labor children, and a middle class agrarian—small business population. An alert faculty recognized a particular need to meet the special problems of conveying concepts to these students with widely varying abilities and interests.

With the guidance of the reading teacher a program was introduced that attempted to accommodate both ability and interest. After identifying the basic concepts to be taught in a unit, a teacher was assisted in using one or more of five basic techniques to adjust to reading ability.

1. Multi-level reading materials

The content teacher was assisted in locating reading materials on particular concepts for at least three to four different reading levels. Attempts were made to span from third to twelfth-grade reading levels.

2. Study guide outlines

In many instances when limited materials were available, detailed study guides were prepared to accompany the one or two sources. These guided the student page by page through the reading, directing him to find particular information on each page.

3. Tape recordings

For some single source, advanced level material tape recordings of the content were prepared. These recordings included introductions, specific things to listen for, the actual content being read, suggestions on note taking, and summaries. All parts described above were not always present. Occasionally the tape recordings would be accompanied with an active involvement sheet for the student to complete as he listened.

4. Films-filmstrips

Where appropriate films or filmstrips were available for selected concepts these were used with teacher prepared worksheets.

5. Re-writes

In some cases where limited sources were available teachers rewrote the material to an easier level.

Examples of some of these can be seen in the assignment sheets pictured in figure 3.

FIGURE 3
Unit IV

I. Articles of Confederation and reasons for adopting the Constitution.
    A. Text p. 150-154
    B. Filmstrip #86 or #5 and worksheet
    C. View film #7—"Building a Constitution" and complete worksheet
    D. Read pages 52-54 in "Elementary United States History"
    E. See instructor for discussion group seminar
II. Preamble
    A. Text p. 162
    B. Lecture from instructor
    C. Listen to tape #16 and complete worksheet
III. Article I
    A. Text pp. 157-158, 159 (Checks and Balances), and 162-170
    B. Filmstrips #86, 87 (House), 88 (Senate). Complete study outline #7
    C. Read "About the Constitution" p. 7-13
    D. Read and complete lessons #3, 4, 5, and 6 in "American History Study Lessons"
    E. See instructor for discussion group
IV. Article II
    A. Text pp. 158 and 170-174
    B. Filmstrip #89
    C. Read "About the Constitution" pp. 11-15
    D. Read and complete lessons # 7 and 8 in "American History Study Lessons"

A Multi-level Assignment Sheet to Accompany a Unit in United States History

Once teachers had grasped the unit approach and felt comfortable with basic behavioral objectives and related concepts, preparing multi-level approaches became easier. They also discovered that many routes could lead to achievement of these objectives. With this perception many alternative assignments were introduced with provision for the student to select according to his interest. Figures 4 and 5 show varying assignments students could choose in conjunction with a social studies unit and an English unit.

FIGURE 4
Unit IV

I. Learning Activities	
A. Read text—chapter 8 and do worksheet * ______	15 points
B. Listen to tape; do worksheet	25 points
C. Write a constitution (see instructor before)	15 points
D. View two or more film strips; do worksheets	5 points
E. Art work	
1. By means of a chart, or cartoons contrast the powers of the central government under the Articles of Confederation and the constitution	6 points

2.	Make a poster or posters illustrating the freedoms set forth in the Bill of Rights	6 points
3.	Divide a chart into three sections headed legislative, executive, judicial. Under each, write the powers or responsibilities assigned to that branch of government	6 points
F.	Read "American History Study Lessons"; do questions	15 points
G.	Learn and sing to the class any song dealing with the constitution or other significant historical event of the era when the constitution was framed	5 points
H.	Read "Elementary United States History" (pages 52-58)	5 points
I.	Write to a congressman; see instructions	5 or 10 points
J.	Read "Our American Government"; take oral quiz	15 points
K.	Write a paper on how you can participate in government (between 1 and 2 pages)	7 points
L.	Read "About the Constitution"; do work sheet	15 points
M.	Participate in a simulation game. See instructor for group	10 points
N.	Make an oral report on one of the following (see instructor)	5 points
1.	Any one of the first four articles in the constitution	
2.	On any man at the constitutional convention	
3.	On the bill of rights	
4.	Shays rebellion and how it showed the need for a strong central government	
O.	Learn the preamble of the constitution	5 points
P.	Locate newspaper or magazine articles dealing with conflicts between federal and state governments and with supreme courts	5 points
Q.	Unit test	100 points
R.	Book Reports, Fiction or Non-fiction	10 points
S.	Your own idea (see instructor)	10 points

Minimum performance 80% acceptability for full credit. Extra credit will be allowed for outstanding performance.

Grading:

A 200 points or above
B 170-199 points
C 140-169 points

FIGURE 5
Special Projects

1. *Bulletin Board* (100 points possible)
   Prepare a bulletin board relating to our personalities, physical growth, personal experiences, or any similar idea.
   a. You may work in a group of three students on this project.
   b. Plan your board display on a sheet of paper and hand it in for approval before you begin.
   c. With your plan, list any materials you'll need for your board.
2. *Illustration* (100 points possible)
   Illustrate a special event, or an exciting moment in your life. Use any art media on paper at least 11 x 14. Your illustration will be displayed.
3. *Life Story* (200 points)
   Write your life story. Make this a special project—one worthwhile for you and your family. Do it carefully and get any help from home that you need. If done neatly, it will become a real treasure for you.
   a. You could follow the outline which is on a special handout I have, or make and use one of your own.
   b. Include pictures and special documents of your life if you like.
4. *Constructs* (100 points possible)
   Construct something which signifies a special time in your life. Use your imagination. Remember it must be of significance to you—not necessarily to anyone else.
5. *Display* (100 points possible)
   Prepare a display of one of your special interests or hobbies.
6. *Poem* (100 points possible)
   Write a poem about a chapter from your life.

7. *Read* (100 points possible)
   Read a biography and report on it.
   a. It would be a good idea if you'd check with me on the book you've selected before you begin reading.
   b. Prepare either an oral or a written summary of the book.
      (1) If oral—maximum of 5 minutes given to the class.
      (2) If written—obtain a report guide from me.
8. *Memorize* (100 points possible)
   Memorize at least 25 lines of prose or poetry on the life of someone.

The portion of the senior high program reviewed suggests several possible ways to adjust to reading ability and other interests and abilities.

Of couse, both programs are still in their early walking stages. With careful evaluation, refinement, and further development along with the other areas of secondary reading programs, the day will not be far when secondary reading runs as part of the total secondary curriculum team.

Creative Reading

E. Paul Torrance
University of Georgia

My initial interest in creative reading grew out of my attempts to teach graduate students in educational psychology courses to make creative applications of the information they acquired. After numerous dismal failures, I began wondering if the trouble might spring from the way the information was stored. This was followed by a series of several experiments in which instructions for storing information acquired from textbook reading and the reading of research articles was varied. In one experiment, the psychological sets for creative and critical reading were given for the reading of research reports and the production of evaluative reports of the research report. In several other experiments, memory, creative, and critical sets were established for reading textbook assignments in preparation for examinations requiring one of these types of performance.

The instructions I gave to establish the creative reading set in mastering textbook assignments are as follows (Torrance & Harmon, 1961):

> When you read, it is important that you think about the many possible uses of the information which you are reading. It is especially important that you think of the various ways in which the information could be used in your personal and professional life. In reading, do not just ask, "What is the author saying?" Also ask, "How can I use what the author is saying?" Do not stop with just one use. Think of as many uses as you can of the important ideas presented. Jot down some of these uses for future reference. It may take some practice before you are really successful in assuming this set or attitude towards your reading, but do not be discouraged. By the third day, you should find it easy to assume this set.

Students reported that with practice they were able to shift from one approach of storing information to another with reasonable success. The results of the textbook-reading experiments showed that the different instructions for storing information did indeed make a difference in achievement on different kinds of tests (Torrance & Harmon, 1961).

In the experiment involving the critical and creative reading of research reports (Torrance, 1959), those reading the reports with a critical set were required to describe the defects in the statement of the problem and its importance, the underlying assumptions and hypotheses studied, procedures for collecting and analyzing the data, the conclusions and interpretation of the findings, and a critical appraisal of the worth of the research. The creative readers were asked to think of new possibilities suggested by the problem and its importance, other possible hypotheses related to the problem, improvements which could have been made in collecting and analyzing the data, other ways of presenting the findings, and an appraisal of the possible applications of the findings. Students reading research reports creatively produced new ideas of their own which were judged by a panel of advanced students in the special field and in creativity to be more creative than were those of their peers who read critically.

As this series of experiments unfolded, I was involved in many other things most of which have never been reported. As my students went either to college teaching jobs or back to their teaching positions in elementary and secondary schools, however, they experimented with some of the ideas about creative reading that they had experienced in these experiments. They continued to relate exciting accounts of the consequences. At that time, the idea did not occur to me that it might be possible to apply some of these findings to reading books or to the guides for teachers in the use of reading books. It was clear to me that much work was needed to develop the skills of creative reading through a child's education. Out of this realization came the idea-books by R. E. Myers and me (1964, 1965ab, 1966ab) and the Imagi/Caft materials by Cunningham and me (1965).

Among graduate students we found an inability to think in terms of possibilities—what might be the consequences of applying an idea derived from theory or research. Thus, Myers produced in *Can You Imagine?* for children in the primary grades such exercises as:

> What could happen if every flower in the world were yellow?
> What could happen if we had a green snowfall?

Graduate students were inept in producing alternate solutions to problems, so we produced the following exercise for primary children:

> If you were a zoo keeper, what would you do if this happened?
> One morning you come to the zoo and find your helper—inside
> the monkey's cage. The monkey is outside sweeping the walk!

We found graduate students were limited in empathy. Thus, we invented exercises at all levels to involve children in imagining themselves as something other than themselves. We began with animals and inanimate objects. In one exercise we asked, "Would you rather be a raindrop or a kite?______________ Why?____________ What does a raindrop do?______________ Can a kite do the same things? ____________ Would you like to be a raindrop in the summer? In winter? In spring? On a mountain top? On an island? What would you see in the daytime? What would you see at night? Show how you would be a raindrop or a kite by dancing like one. By singing about what would happen if you were one. By writing about what you would do if you were a raindrop or a kite."

We found that graduate students did not understand their own psychological processes through which original and worthwhile ideas are produced. Thus, in the Imagi/Craft materials we confronted children with exciting dramatizations about the psychological processes of great inventors, scientific discoverers, and geographic discoverers and then involved them in exercises that called for similar thought processes. To understand how this strategy works, listen to an excerpt from *Master of Miracles: The Thomas Edison Story* (Cunningham & Torrance, 1965). Edison is talking with a newspaper writer as he struggles to invent the electric light.

> JOHN: It's a beautiful dream, Tom, and I know how strongly you feel about it, but when every responsible scientist in the world insists it can't be done, how can you hope to—
>
> EDISON: But it can be done, John! I'm sure it can!
>
> JOHN: Why push your head against a stone wall, Tom? You know as well as I do how many people have designed lamps that gave off fairly suitable light, only to see them fail because they weren't practical enough for general use. They failed either because they were too large, too heavy, too dangerous, too undependable, too expensive, or they burned out too quickly.
>
> EDISON: That's right, John, they did fail, every last one. And, you know why? Because their inventors were all on the wrong track!

I chose this excerpt because I have found it so difficult to communicate the difference between making marginal improvements which can be achieved by local thinking and making breakthroughs or fundamental changes, something not achieved through logical thinking processes. Listen now to Edison as he discusses his problems of the electric light burner:

> EDISON: Hundreds and hundreds of experiments, almost 15 months worth, and I haven't found the answer yet?
>
> MARSHALL: What about pumping the air out of the bulb? Didn't that work either?
>
> EDISON: Oh, it helped some, of course. Pumping the air out to form a vacuum is absolutely necessary if the burner thread's going to stay light for any length of time at all. At least, I found out that much. But even with the air pumped out, I haven't been able to keep her lit for more than a few minutes. We've tried about everything in that bulb except a

> piece of cotton thread. Everything from—wait a minute. A thread! Why not try a piece of ordinary cotton sewing thread?
>
> MARSHALL: Sewing thread? Oh, Tom, you're already being called a raving madman since you've started these light experiments of yours. But if you're actually serious about using sewing thread in a light bulb, then it'll really start—

The long-playing recording then goes on to tell in dramatized form the story recorded in history of how Edison did use a cotton thread carbonized by baking it in a charcoal powder in the first electric light. Now listen to an excerpt from the exercise designed to involve children in some processes similar to those for which Edison was noted.

> NARRATOR: Among Thomas Edison's many talents for invention and discovery was his very special ability to combine two or three ideas together to form something totally new and different. A good example of this ability might be seen in the manner in which he invented the world's first practical artificial light. . . .
>
> In order to give you some experience in developing this important ability, suppose we try a little experiment right now—an exercise you'll find not only profitable and interesting, but fun, besides.
>
> For the next several minutes, I'm going to play a number of familiar sounds for you. As you listen to these sounds, your job will be to write them down.

This is followed by the presentation of twelve common sounds such as the chirping of birds, a herd of cattle, and the hammering of nails. Then the narrator gives suggestions for combining the sounds as the basis for a story. He closes with the following motivating instructions:

> However you wish to handle the assignment, be sure to let the sounds themselves suggest your story to you, as they stimulate your imagination and thus move your tale forward to a successful conclusion. In so doing, you'll be gaining much valuable experience in the art of combining the common and familiar, as Thomas Edison did, to arrive at something totally new and different.

In the course of the 18 long-play recordings and their accompanying exercises and the suggested creative activities in the teachers' guides a considerable amount of information was given about the psychological processes involved in creativity and considerable practice was given in a variety of creative thinking skills. Rather extensive field tests indicated that children who had been involved in these materials compared with their controls attained greater creative growth as measured by tests of creative thinking, creative writing, and the like; liked school better and attended more regularly; and gave more consideration to careers in creative fields.

It was about this time that I was challenged to formulate my experiences into possible applications for the reading field. My first attempt at this was for the 1963 Annual Education and Reading Conference at the University of Delaware (Torrance, 1964). At this time, I developed the idea that creative reading could be motivated by heightening expectations and anticipation and by doing something with what is read. This doing something with what is read, I conceptualized in terms of the following four levels, one not necessarily more creative or valuable than the other.

1. Reproducing what is read with imagination, as though the thing is happening.
2. Elaborating what is read.
3. Transforming and rearranging what is read.
4. And going beyond what is read.

I proposed a variety of ways by which each of these levels could be taught at all levels of education.

I was next challenged to reformulate my experiences and conceptualize them for teachers in terms of techniques and materials by the Macalester Seminar on Productive Thinking in Education in January 1966. As I review this presentation (Torrance, 1966a), I find that I talked almost entirely about the use of trade rather than text materials. It was not until later that year that I was to become involved in a concern about children's reading texts through Reading 360.

To provide practical, imaginative, and effective guidance for building the creativity strand for Reading 360 was an enormous challenge and an opportunity to make all that we had learned "pay off." I re-examined my previous formulations about creative reading, listed all of the creative thinking skills for which practice was given in the idea books and the Imagi/Craft materials, and the results of all of the experiments that I had conducted.

The evidence seemed to indicate that the exercises we had designed could be extremely powerful in motivating and guiding creative reading. They seemed to have a built-in motivation that made unnecessary the application and reapplication of teacher-imposed rewards and punishment. They also seemed to motivate both the acquisition of information and intellectual skills. I identified as their most essential and pervasive characteristics, incompleteness. This incompleteness seemed to be the real basis for much of their motivating power. I had also identified two other essential characteristics of these exercises: producing something and then doing something with what was produced and getting children to ask questions. Upon deeper examination, however, I realized that even the motivating power of producing something and then doing something with it and question asking was derived from incompleteness or open-mindedness. As a result of this thinking, the guides that I prepared for authors and editors of Reading 360 consisted of a conceptualization of the strategies that can be used in reading to create and/or use incompleteness. I found that these strategies can be classified as being appropriate before, during, or after a reading experience.

The total list of strategies is quite long, but the following are some of the more important ones:

BEFORE A READING EXPERIENCE

1. Confrontation with ambiguities and uncertainties.
2. Heightened anticipation and expectation.
3. The familiar made strange or the strange made familiar analogy.
4. Looking at the same thing from several different psychological, sociological, physical, or emotional points of view.
5. Provocative questions requiring the learner to examine the information in new news.
6. Predictions from limited information required.
7. Tasks structured only enough to give clues and direction.
8. Encouragement to take the next step beyond what is known.

DURING A READING EXPERIENCE

1. Continued heightening of anticipation and expectation.
2. Encouragement of creative and constructive rather than cynical acceptance of limitations.
3. Awareness of problems heightened.
4. Exploration of missing elements and possibilities made systematic and deliberate.
5. Juxtaposition of apparently irrelevant or unrelated elements.
6. Mysteries and puzzles explored and examined.
7. Ongoing predictions from limited information as new data are acquired.
8. Surprises heightened and deliberately used.
9. Visualization of events, places, and the like encouraged.

AFTER A READING EXPERIENCE

1. Ambiguities and uncertainties played with.
2. Constructive responses encouraged (a better way, a more beautiful effect, and so forth).
3. Digging deeper, going beyond the obvious, encouraged.

4. Elaborating some element through drawings, paintings, dramatics, imaginative stories, dramatizations, and the like.
5. Search for elegant solutions encouraged (i.e., the solution that takes into account the largest number of variables).
6. Experimentation and testing of ideas encouraged.
7. Future projection encouraged.
8. Improbabilities entertained.
9. Multiple hypotheses encouraged.
10. Reorganization or reconceptualization of information required.
11. Syntheses of diverse and apparently irrelevant elements.
12. Testing and revising predictions.
13. Transforming and rearranging information or other elements.
14. Taking the next step beyond what is known.

I had full confidence that the authors and editors could be taught rather easily to produce ideas for implementing these strategies for creating and/or using incompleteness to motivate creative reading. I also believed that most teachers could acquire the skill of producing such ideas. Initially, I had thought that the reading books themselves would be little affected by whatever guidelines might be produced. About this, I was mistaken. Somehow the authors were stimulated to write and to select stories that teach the creative problem-solving process and that involve children in creative reading through the strategies of incompleteness.

The guidelines that I prepared consisted of explanations and illustrations of the strategies for creating and/or using incompleteness based on a single story. As evidence that teachers can produce ideas for these strategies, let me illustrate a few of them with ideas produced by one of my classes at the University of Georgia. I asked them to base their illustrations on the story, "The Wonderful Machine," a story about two boys who took a pile of junk that had been dumped on their line and invented a wonderful machine with which they produce bubble gum, gum drops, cherry pop, popsicles, popcorn, gingerbread cookies, and finally a pretzel that caused the wonderful machine to break down.

They suggesting the following activities for implementing the strategy of confrontation with ambiguities and uncertainties before reading:

> To most children at this level, the title of the story and the illustration at the top of the page will be a confrontation with ambiguities and uncertainties. If you want to make this confrontation more dramatic and curiosity-arousing, bring in a large sack or box of junk including springs, screens, sockets,

pipes, pots, screws, grommets, gaskets and gauges and dump them on the floor of the classroom or on a large table. You could wait for their reaction to your action or you could ask what they might invent from this raw material. Another approach would be to confront the class with a piece of high quality sculpture made from junk and see if they can figure out what went into the creation. Other possibilities include putting a piece of junk on each pupil's desk; taking the entire class on tour through a junk yard, having the class make art objects from metal junk or a picture from scraps of paper, fabric, wood, light metal, cardboard, etc.; making up stories about a piece of junk, etc.

To implement the strategy of heightening surprise, the following activities were suggested for use during reading:

As the machine produced various things and makes various noises, ask, "Was that what you guessed?" Since one of the boys was named Orville, some readers think he is Orville Wright and expect the machine to become an airplane. If someone has this expectation, keep asking if this is going to happen. The ending will be especially surprising, if this is followed through to the very end.

The following questions might facilitate the making of future projects:

What will the boys do with the pretzel that came from the wonderful machine?

What will the boys do with the new pile of junk?

What kind of problems will a boy like Orville encounter? Pete?

What kind of adult would you expect Orville to become? Pete?

What will Orville and Pete do with the tent?

Now let us examine a few examples of how these strategies can be built into reading books. One of the early first grade books, *A Duck Is a Duck* (Clymer, 1969a), provides a good example of informing about the creative problem-solving process. The story begins with the question, "What is it?" The dog has spotted something hiding in a bush. It turns out to be a turtle. The children take the turtle in a box and engage the teacher in the creative problem solving process through the game, "Can You Guess What's in the Box?" The problem then becomes "What Can We Do With the Turtle?" The children offer alternative situations. Finally, applying the criterion "What Do Turtles Like to Do?" the children decide to put the turtle in the pond in the park. To further the development of empathy, an exercise in the creative skills practice book asks, "What if you can be anything you want to be in the pond in the park?" Suggestions are given for enacting the drama of life in the pond with the children in the roles of the various occupants of the pond—fish, alligators, frogs, logs, roots, fog, mosquitos, ducks, turtles, etc. The children are then ready to draw pictures that tell stories of their experiences or to make up stories with words.

Let's examine a few features of another first grade book, *May I Come In?* (Clymer & Gates, 1969). One of its emphases is "visual literacy" and obtaining information from illustrations. One story features various animals running on the snow. The final illustration shows each animal in his home with his tracks. The reader can then go back and figure out where each animal went in the snow from his tracks. One of the illustrations contains a number of incongruities. The reader is asked first to become aware of these incongruities and then to imagine some more. There are also a number of exercises on awareness of analogies and these pave the way for making effective the strategies that employ analogy.

The creative skills practice books and recordings provide the teacher with support in implementing the strategies. Some of the recordings for the first grade combine exercises in auditory discrimination with exercises in empathy and visualization. Let's listen to an excerpt from "Zoo Sounds" (Torrance & Nash, 1969) designed to accompany one of the units in *Helicopters and Gingerbread* (Clymer, 1969b):

> The first round is the elephant. Are you ready?
>
> (ELEPHANT SOUND)
>
> Let's all make the elephant sound.
>
> How do you think the elephant feels? Does he sound like he's sad? Or, do you think he is angry or mad? Or, is he happy? Maybe he's hungry. (Pause)
>
> Let's play a game, boys and girls! Let's see if we can make the elephant sound when he feels each of those things. O.K.?
>
> First, let's try to sound like a very, very sad elephant. (Pause)
>
> Now, let's try to sound like an elephant that is mad and angry. (Pause)

The recording continues with the other zoo animals in all their varied moods and finally seeks to motivate the children to draw a picture that will tell a story of one of the zoo animals in one of the moods—sad, angry, happy, or just hungry.

As we began thinking about some of the special problems of an Urban Reading Program, we became more aware of the need to identify and validate the hierarchy of creative thinking skills as they are related to reading. I am now engaged in this process and I am finding it quite challenging and exciting. The conceptualization of their hierarchy is still incomplete and only a few of the elements have been validated. The following illustrations from the first two levels, however, should communicate some idea of what I have in mind and what guidance it may provide in developing skills of creative reading.

LEVEL 1

1. *The child will be able to produce new combinations through manipulation.*

Perhaps the most fundamental learning skill that the child brings with him to school, whether at age 4, 5, or 6, is the manipulation of objects. Reading programs can build upon this learning skill by providing the guidance necessary to make these manipulative behaviors produce meaningful relationships greater than chance and to make certain relationships become meaningful ones.

Manipulation of *shapes* (lines, angles, triangles, circles, squares, rectangles, and finally irregular shapes) can be used to discover and discriminate the alphabet and other meaningful symbols (pictures of the human face, human body, objects in the environment, etc.)

Manipulation of sounds can be used to develop auditory discriminations necessary for reading. At this level, the emphasis might be on producing animal sounds, developing a language of sound (long-short, slow-fast, heavy-light, etc.) and combining the elements of this language into the communication of feelings, actions, etc.

Manipulation of colors can be used in a gross way to lay the foundation for color discrimination and to interpret (read) the meaning in color. At this stage, manipulation might be limited to mixing the primary colors and might be implemented by something similar to the Little Golden Book, *Color Kittens* (Brown, 1958).

Manipulation of *story characters, people, toys, etc.* through creative dramatics, puppet play, etc. can be used to lay the groundwork for story making, story reading, etc.

At the most fundamental level, simple manipulations of low-level complexity and natural trial-and-error manipulations should be emphasized. At the next level, more deliberate and complex manipulations can be stressed. Even at this most fundamental level, however, some emphasis can be made in helping the child give and get meaning from the combinations produced through manipulation.

2. *The child will be able to see and produce many possible combinations or new relationships.*

This skill should be built deliberately and systematically upon the skills described in 1 above. In each area (shapes, sounds, etc.) children can be encouraged to apply creative thinking by encouragers such as: what all can be added, what will happen if you add____to____; what can be subtracted, what will happen if you subtract____from ____; what will happen if you cut____into two parts; what will happen if you place this shape in the place of that one; etc. (See Osborn's principles for producing multiple alternatives in *Applied Imagination,* 1963.)

3. *The child will be able to identify missing elements in pictures, shapes, letters, etc. at a very gross level.*

Literary materials with missing elements could be created. Fine details should be avoided; only gross elements should be involved. Materials might involve objects cut into two parts, major elements omitted from pictures, gross discrepancies in pictures, one object behind another object, elements missing from letters of the alphabet, etc. Also at a gross level, children might be encouraged to complete incomplete figures as in Task 2 of the *Torrance Tests of Creative Thinking,* (1966b). The drawings should be larger than the ones in the text booklet.

LEVEL 2

1. *The child will be able to produce increasingly more complex new combinations through manipulation and move to more deliberate experimentation.*

At this stage it should be possible to move the child to a stage of representing a structure at two or more levels of abstraction: on paper through a drawing and concrete through the construction of a model. "Lego" construction materials are good for this purpose. The children can be directed first to draw some structure--a castle, a dream house, a park, an airplane, an animal cage in a zoo, a zoo, etc. Then they can construct the structure they have planned and drawn. They can also construct such things as the letters of the alphabet, numerals, and other symbols.

2. *The child will be able to see and produce increasingly larger numbers of possibilities in combining symbols, objects, animals, people, places, etc.*

At this level the child should be ready to move ahead to more varied shapes, sounds, etc. There should be more emphasis on interpersonal combinations in different places and on the consequences of these combinations. An interesting model which delights children of this age is *Tell a Tall Tale* by Kent Salisbury and Andrina Zanazanian (1966). In this book, six sets each consisting of two characters, two places, and two consequences can be manipulated into hundreds of combinations.

3. *The child will increase his verbal fluency by naming new combinations of shapes, sounds, movements, animals, people, etc. at a simple level.*

At first, it would probably be desirable to stick with rather simple and highly meaningful combinations and later move to more fantastic ones. Exercises could involve the children in thinking of what certain shapes, sounds, movements, photographs, etc. remind them—what they could be.

4. *The child will be able to make simple syntheses by giving titles or labels to pictures, stories, songs, poems, creative dances, puppet plays, complex wood sculptures, etc.*

Syntheses is one of the highest mental processes and must develop gradually. Generally, training is given in analysis but not synthesis. Simple training in synthesizing such as indicated in 4 should lay the groundwork for reading, especially in making use of titles, pictures, etc. This skill should be built upon the skill described under 3 above.

5. *The child will improve his skills in asking questions about missing elements in objects, pictures, stories, etc.*

At the time children enter school, they have begun to develop skills in asking questions to find out. In school, however, they are frequently given no opportunity to ask questions and fail to continue this development. Reading materials should be developed to encourage continuity of development of these skills. At first, however, the teacher should not be discouraged if the children seem to become stuck on a particular kind of question such as the "why" question. Strange objects, pictures, and stories are good stimulus materials for exercises in developing question asking skills about missing elements.

CONCLUSION

I have tried to capture as much as possible of the essence of some rather complex developmental and experimental work concerned with creative reading. I hope that I have been able to communicate some of the excitement, promise, and challenge in creative reading. Above all, I hope that I have been able to communicate enough to the incompleteness of both the developmental and experimental work to capture your imagination and to challenge your own creativity.

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Recognizing the Reading Difficulties of Individual Students and Techniques Leading to Their Solution

Joseph B. Tremonti, C.S.V.
Loyola University, New Orleans

Reading skills developed in the early grades are not sufficient for the effective reading of specialized materials in higher classes. Teachers recognize that improvement in reading is of first importance because it will improve learning in so many related areas. A teacher who is seriously interested in and enthusiastic about improvement in reading has much to offer the students.

Teachers of all subjects have a responsibility and obligation to aid students in their acquisition of useful and extended reading skills. Reading is not a simple, but rather a complex skill which requires a sound approach directed toward well-defined goals. Teachers need to promote growth in reading by stimulating interest and prepare students to change their attitude toward reading in different subject areas. The alert teacher uses a variety of methods to create a desire to read and to develop wide reading interests as well as the ability to use study-reading skills effectively. Since most work must be done in classrooms, the teacher is the most important factor in giving direction in reading matter.

Davis (1) states that "Since learning to read is a lifetime process, it cannot be mastered in the elementary school; so high school and college instructors have the responsibility for helping students to continue their growth in reading skills."

SPECIFIC PROBLEMS ENCOUNTERED

Visual difficulties are manifested by students who read in unusual positions or too close to their work, move their book back and forth, have short attention span, are nervous and tire easily of reading, have a strained appearance, complain of print blurring or headaches, squint, have sties or granulated or inflamed eyes, or are not able to see at a distance. Suggested ameliorations include the keystone Visual Survey binocular tests to detect those who need glasses or change of lens, getting students to cooperate in maintaining good posture, choosing materials for reading with care as to type and print, and finally, seating the student in a good light and near or far from the front, according to eye defect, and giving individual help by using the visual-auditory method of teaching.

Auditory difficulties are detected among students who add or omit sounds, make frequent requests for repeating questions or statements, are inattentive while others listen, are unable to follow oral directions, have vacant expression, respond slowly or not at all, draw away from class and do other things, ask their neighbors what the teacher said, are cross, impatient, or irritable, resent being questioned about hearing, have vague concepts, turn one ear toward the speaker, or use a monotonous or unnatural pitch of voice.

Poor motor control is manifested by many reversals and repetitions. The student skips lines, loses place, has erratic behavior in reading such as slow rate or rapid but jerky, and has erratic uncontrolled eye movements. Suggested remedies would be to provide practice in rhythmic exercises, train the student to develop a consistent left-to-right sequence in reading (the EDL controlled reader is good for this), trace, write and sound words that are frequently confused. Severe cases should be referred to a neurologist for analysis.

Educational immaturity is manifest in a student who has a limited knowledge of word meanings, reads assignments with reluctance, does little or no outside reading, has little acquaintance with or liking for books, and lacks understanding of literary expressions or allusions.

Vocalizers are detected in students who pronounce the words with their lips. Sub-vocalizers are those whose adam's apple moves up and down while they are reading. Others move their heads as they read each line (it takes 17 to 19 hundredths of a second for the head to return with each new line read).

All these defects slow down reading rate. For the most part they can be corrected by periodically reminding the student of them. Sub-vocalizers are difficult to correct—we have found placing an alarm clock with a loud clicking sound next to the ear to be very helpful in making this correction. The reader becomes so concerned with the ticking that unbeknown to himself he stops sub-vocalizing.

Individual attention is basic for eliminating poor reading habits. In a program devised to help the student individually, the teacher must accept two postulates:

1) Each student is different.

2) Each student can make progress when provided with reading experiences at his own level.

In formulating a good reading program, the reading teacher will always exert himself:

1) To offer a readiness program, even at the junior college level, build up to harder word; incorporate other subjects into the reading; test student to find his deficiencies.

2) To motivate the subject or the lesson, use charts, stories, displays, pictures, visual aids, books, research, and most important—the reader's own personality.

3) To use materials with which the student will find success.

4) To emphasize wide reading—many books for recreational and informational purposes. When the child reads for his own pleasure and information, maximum reading success will be achieved.

5) To consider reading an all-day responsibility.

6) To take every opportunity offered to gain independence in word recognition and the pronounciation of new words.

7) To use repetition to develop and to build new vocabulary.

8) To use exercises to help build comprehension by use of seatwork, workbooks, questions, conversation to emphasize comprehension skills.

It is the duty of the reading teacher to help the student correct deficiencies and gain proficiency. He must take the student at the level at which he receives him and develop him with the best techniques, materials, and time allowed.

SOLUTION

Robinson (2) points out the following points in learning how to read effectively, starting with the idea that every teacher should have special training in reading in order to better help the students in improving their reading:

1. Read for the key words in a sentence.
2. Read for key sentence in a paragraph.
3. Read for the main thought in a paragraph.

The primary goal of reading instruction at the junior college level is in independent critical reading. Within the broad framework of this fundamental goal, the methods of instruction will revolve around systematic extension of previously learned abilities, further refinements of basic skills, and in many cases, the acquisition of new techniques required for dealing with the variety of reading materials available to young adults.

Other factors (3) which students need help in are *Vocabulary*—all students need an adequate vocabulary. This vocabulary should support the major field especially. It must be the responsibility of the content-area specialist to determine vocabulary deficiencies is his area and prescribe materials that will be of the greatest help. *Comprehension*—examine the questions used in checking comprehension. If they do not do the job, change their format. Use more inferential, sequential, and vocabulary type questions. *Word Attack*—teachers often forget and overlook this area, for word-attack skills are generally automatic with them. Pupils must master their ability as quickly as possible. Give exercises which will enable pupils to apply these skills so they become automatic.

To read well the student needs certain skills: First, he needs increased skill in ascertaining the exact meaning of an author. Second, he needs skill in identifying and detecting the meaning of words. Third, he needs ability to make the adjustments essential for interpreting various types of materials. Fourth, he needs skill in interpretation by learning to recognize the forms or types of thinking with which they are dealing. Fifth, he needs growth in the powers of critical evaluation. Sixth, students need facility in locating, selecting, and using appropriate reading materials. Students need to develop the habit of reading for recreation, enjoyment and information.

In reading nonfiction materials, junior college students must be guided to develop the ability to distinguish what is true from what is false or biased; they must be able to recognize the author's motives and use of propaganda; they must have the ability to suspend judgment until all facts have been assembled for consideration; they must be able to integrate and organize information in order to arrive at sound conclusions. Students must learn to question repeatedly the validity of nonfiction material by asking, (a) how does the author know this? (b) is this information as true today as when it was written? (c) why are these facts important to me? (d) what have others said about this topic? Without direct guidance of the teacher, few pupils learn to ask these questions.

Junior college students should have developed their thinking to the point where they are capable of more mature judgments than before and finer degrees of interpretation. It is now possible to develop the higher critical reading skills: evaluating the relative importance of ideas, distinguishing between fact and opinion, detecting propaganda techniques, and noting authors' moods, purposes and biases. These abilities are important in a democratic society.

The junior college student may be regarded as an "armchair commodore." (4) Is he in full command of the voyage he charts and the mind-powered vessel he sails? A commodore, whether charting his way through a tossing sea or an adventure-packed book, senses the ardor of a bold voyage under his firm authority. In command of his craft, he pits his strength and skill against the sea—or the sea of words.

Every teacher can make helpful suggestions to his students in matching their reading speed to the difficulty of the subject matter. Attitudes and skills for effective reading can be acquired through training and experience, development in depth, and widening of the area of application. This improvement is of first importance because it will improve learning in many related areas.

Ability to interpret is conditioned by the experience and background of the reader. 1) There is need for increased skill in ascertaining the exact meaning of an author. 2) Students may grow in skill in identifying and detecting the meanings of words. 3) Students may improve their abilities to make the adjustments essential for interpreting various types of materials. 4) Students may improve skill in interpretation by learning to recognize the forms or types of thinking with which they are dealing. 5) Students may grow in power of critical evaluation. 6) Students may improve interpretation by developing facility in locating, selecting, and using appropriate reading materials. 7) Students may grow in the habit of reading for recreation, enjoyment, and information.

According to Margaret J. Early (5), if the various types of reading programs suggested by competent authorities are tried out in actual practices according to comprehensiveness of approach, at the top of the ladder would stand the all-school developmental program: co-operative planning by all teachers so that skills will not be overlooked or over-stressed, and adjusted reading materials in all subjects for slow, average, and superior students.

The extent of the improvement will depend on the capacities of the poor readers as well as on the competency of those undertaking to provide the assistance in supervision, continuous appraisal of the effectiveness of the program, and the teaching procedures used.

According to Ruth Strang, (6) a sound approach directed toward well-defined goals, has specific goals:

> The printed words must have meaning, use and purpose for the reader. To accomplish this reading must be presented as a thought-getting process. It must be based on experience before reading.
>
> To improve comprehension help must be given to students to get the author's thought, main ideas, and supporting details.
>
> The classroom teacher must help students see the sequences and relationships in reading all subjects. This process includes generalizations, references, conclusions and appreciations.
>
> Critical reading must be taught to bring about the ability to recognize the writer's intent, mood, and purpose; to appraise the authenticity of sources of information; to detect emotionally charged words and resist their deceptive influence; and to test the writer's generalizations and conclusions.
>
> Teachers have the obligation of guiding students to read wisely; this includes acquainting them with sources of information such as encyclopedias, digests, indexes, and card catalogues; giving special instructions in using the library; and instructions in extending the scope and improving the quality of one's reading.
>
> The teacher should help students achieve a beneficial balance among all the competing avenues of communications—radio, television, motion pictures, books, and magazines.

An appreciation of the values of reading is achieved through an access to the knowledge salvaged through the ages; a chance to think about an arresting idea; and an invitation to use imagination.

In the procedures for moving towards this set of objectives or goals, it is well to include a diagnostic approach by learning what the student can read, what he does read, what his method is, what his difficulties are, and what prevents him from realizing his reading potentialities. This information may be obtained from informal and oral reading tests, cumulative records, personal reading, and written book reviews which indicate social background and intellectual maturity.

Making provision for individual difference is a function of the classroom teacher. Recommended procedures to accomplish this objective include individual assistance, sub-groups within a class, differentiated assignments, related projects, and periodic comparisons.

TECHNIQUES

To promote vocabulary growth, every teacher must assume a responsibility. The development of word meanings must take place in all subjects. The methods used in all classes to develop word meanings and word identification should complement and supplement each other. Through co-ordinated teaching, maximum vocabulary growth can be achieved.

Vocabulary Building places emphasis on a working vocabulary. By a working vocabulary is meant familiarity and knowledge of words that are encountered in textbooks and class discussion. The best way recommended to build such a vocabulary is to have the individual student make flash cards of unfamiliar words. The procedure is to use three by five cards. When a student encounters an unfamiliar word in his textbook reading, on one side of the card have him record, in the upper right hand corner, the subject matter area and in the center-middle, the word. On the opposite side of the card he should make the following entries: first, dictionary definition of the word; second, the sentence in which the word appeared the first time it proved unfamiliar to him; and third, a sentence in which the individual himself uses the word. It is further recommended that the individual carry these cards around with him and during the day review them when an opportunity presents itself. When a group is mastered, the student should put the cards aside and return to them a week or two later to refresh the memory. Prior to test time, he should pick out the subject-matter words and review them—most tests contain some definitions. This procedure again refreshes memory of the word and re-enforces the subject-matter area by reading of the sentence in the context.

Textbooks and other printed material are an important part of the equipment for learning, but the teacher should not expect the students to use the textbooks effectively without instructions in the techniques of proper use; in taking time to teach them to their students, they are assuming the responsibilities which they should take for teaching reading.

The subject-matter teacher should explain the structure of the textbook, such as paragraph headings, italicized words, items in boldface type, topic sentences, footnotes, summaries, bibliographies, and questions at the end of the chapter. These things, often obvious to the teacher, are not equally apparent to all the students.

An excellent approach to this orientation is the five steps suggested by Bear. (7) These steps include making a preliminary survey to get an idea of what the material is about—what the key concepts are—before reading; reading for understanding, formulating questions as the reading progresses; testing oneself to be sure of particular points; taking notes on the reading; and reviewing the major points of the assignment and re-reading any sections that do not seem clear.

There are six processes essential to reading for information: (8) setting the purpose, surveying the material, adjusting the rate, following the content structure, making evaluations, and extending and refining the concepts.

The teacher should review some method of the processes of study. One that is logical and can be grasped by the junior college student is the PQRST (previews, questions, read, state and test) method. *How to Study* by Thomas F. Staton (9) discusses the method.

Factors which influence learning include motivation, reactions, concentration, organization, comprehension, and repetition.

Tools of learning are devices that can be used to increase efficiency of learning in the classroom and study situations. They are tools which will assist in using principles already discussed, and they include establishing a time and place for study, listening, notetaking, outlining, summarizing, textbook study, underlining and reviewing.

Necessary abilities for successful study and critical reading can be taught: reading with concentration; selecting information that bears upon the subject; skimming; assessing the accuracy and pertinence of statements read; reading between the lines for the implied meanings of the author; and organizing the material for retention and presentation to the class. Many others could be listed.

A sound approach is directed toward well-defined goals, which are recognized by each individual teacher. All teachers need to be teachers of reading from kindergarten through college. Therefore, their training in this area is of the utmost importance. The teachers are the most important factor because much work must be done in the classroom. By kindness and help the instructors must get the most from the pupils in the reading field. To fulfill this need the individual teacher uses a variety of methods to create a desire to read:

1) There is a need for advanced planning on the instructor's part in order to know where effort should be directed, and where proper materials to help carry out the goals can be obtained. This planning should be flexible enough to facilitate cooperative planning with the student.
2) Every teacher and student should know why a particular activity is carried out and how it fits into the total picture of the continued growth of the individual and the group.

In view of this, to implement the changing concepts of reading instructions in the development of basic skills according to French (10):

1) Teachers need to become more articulate through reading the articles, writing, and method of the leaders in the field of reading.
2) Teachers seek help from professional sources; this training (in areas where there was no familiarity) will make the teacher more familiar with the skills he must teach.
3) A good individual testing program is necessary, and the appraisal of the pupil which follows must take into consideration the pupil's ability.
4) A program of reading must provide a balance of emphasis including all phases of the reading process.
5) Total efficiency must be met to keep the whole program organized, balanced, and flexible enough to allow each pupil to obtain maximum growth in the reading program.

In summary, then, the chief requirements of an effective reading program are clear objectives, careful diagnosis of each student's abilities, variety of reading material, high motivation, and sufficient time for skill development. Increased proficiency in reading can be best obtained when reading-study skills are developed in connection with all the activities of the school day. The important idea is to note that reading improvement is the responsibility of an entire faculty working as a team. (11) The primary goal of reading instructions is independence in reading. Within the broad framework of this fundamental goal, the methods of instructions will revolve around systematic extension of previously learned abilities, further refinement of basic skills, and in many cases, the acquisition of new techniques required for dealing with the variety of reading materials available to the students. Therefore, teachers should keep in mind the four basic principles in order to guide their students:

1) Reading is a process of experiencing, thinking and learning.
2) The goal is the teaching of reading for learning and thinking is to make the child less and less dependent on the teacher and more self-sufficient.
3) The interests of young people are as varied as the young people themselves. Happily they can be kindled, sustained, enriched, redirected, and heightened through skillful guidance.
4) Teacher must vary methods of instruction by being ready to adopt new concepts, and by striving at all times to be flexible enough to facilitate cooperative planning with the student.

In conclusion, Kincheloe has aptly stated, "Reading is like golf; after one has developed the right strokes, he enjoys trying them on a new course." At the age of 80, the German philosopher and writer Goethe said, "Learning to read is a lifetime process. I have been at it all my life and I cannot yet say I have reached my goal."

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Developing a Content Reading Program For an Inner City High School

M. Jerry Weiss
Jersey City State College

The time has come to realize that reading is not a separate subject. Too much time has been spent in trying to develop reading centers, equipped with flashing gimmicks, power building kits, boxes and digests to save the world, and we now know that "tactics" have failed to produce "parades" and "panoramas," for the inner city youth in our secondary schools. We have tried to find a book, a spirit master, a panacea which will eliminate poor readers; with what we know about diagnosis and the inadequacy of our standardized tests to measure the reading skills necessary for success in each content area, one can't help wondering how we have learned so much and done so little about the problems of youth and drop-outs in the years of Federal aid to education. Have we really looked at reading in the "realest" sense?

Come with me to Central High School, located in the Central Ward of Newark, New Jersey, where one of history's most devastating fires and riots happened. Here 1400 students, predominantly black, and about 80 faculty, predominantly white, engage in academic endeavors daily. Attendance problems are acute; motivation on the part of the faculty and the students could use some bolstering. Reading problems are most apparent; three teachers, including one specialist, handle the reading activities for the school. Room 412 is the Reading Laboratory, completely stocked with flashing gimmicks, a supply of workbooks, a few tests, and a few paperbacks. Tenth-grade students are assigned to the Reading Laboratory for a six-week stint; there they are tested, drilled, skilled, motivated, and then re-tested and sent back to English forevermore. Teachers can check the reading test scores, but follow-up very seldom ever takes place.

There are things to be understood about the above statement:

1. Most teachers have never taken a course in secondary reading problems and practices; so there is very little that can be expected of them for application within their content areas.

2. Most secondary school teachers are content-oriented. "I teach history or science or literature or mathematics __ __ __ __ __; I am not a reading teacher."

3. Budgets are strained to the breaking point in the Newark schools. Federal aid has been a boon in presenting a dribble of resource materials for keeping curricula up-to-date, but very little exists to provide for the wide range of reading interests and abilities as reflected in the student population.

It was November of 1968 when I first visited Central High School and had the opportunity to meet administrators, teachers, and students. The New Jersey Bell Telephone Company had been interested in becoming involved in an educational assistance program. The Newark Board of Education welcomed New Jersey Bell, and Dr. Benjamin Epstein, assistant superintendent of schools, suggested that Central High School might be the focal point for Bell's efforts. A young, dynamic personnel supervisor, Mr. E. E. Landis, was assigned full time to investigate the situation and to come up with a possible program. Mr. Landis spent six months or so with the faculty and administration and discovered there was much interest in securing some kind of help in reading for these students.

Mr. Landis was referred to Jersey City State College through a mutual friend, and I drafted a proposal for his consideration. Following meetings with other New Jersey Bell Telephone personnel, Dr. Epstein, and Mr. Angell, principal of Central High School, and several faculty members, the proposal was accepted for a trial basis of one year.

It was agreed that reading would not be looked upon as a separate subject. We needed to help each content area teacher of a ninth-grade subject become familiar with reading techniques. However, it was agreed that only those teachers who were interested in working with us should be participants. This would not be a required experience for the entire faculty. Four faculty members from Jersey City State College were to be involved: one would work with English teachers, one with science teachers, one with mathematics and business education teachers, one with social studies teachers. Interest varied greatly from department to department; many of the chairmen reflected great doubts as to whether or not anything could be achieved through a reading program within the curriculum framework. For some, much work would have to be spent in preparing newer and more relevant materials. Teacher security was at stake. "How do you know this will work any better than what I've done in the past?" (Many of the teachers had come to think of reading as being that separate thing far removed from the realities of their content areas; couldn't we keep it that way?) Diagnostic information on the students was minimal and quite useless. Not only did we have to deal with student attitudes and interests, but we also had to work with teacher attitudes and concerns. This combination made the work more tedious and challenging.

The four professors met once, and sometimes twice, a week with representatives from the five departments for in-service education. We tried to help them to become familiar with informal diagnostic techniques, and we even demonstrated these techniques for them. Then we helped them to find a wide range of materials for use in certain classes. We had paperbacks, magazines, programmed materials, television equipment, movies, resource speakers, field trips, all available through the generous grant from New Jersey Bell Telephone Company. Once the materials were available, and once the teachers knew we were doing things now with them, for them, and not instead of them, certain degrees of progress were noticeable.

We helped the teachers to develop an understanding of the complex nature of the reading process and the need to move from a single textbook and from the use of lectures to get ideas across. This is a long hard job. But we succeeded with a very few teachers. We showed the teachers how to organize content matter around broad conceptual themes and how to order materials for fulfilling the objectives of such units of work. Teachers and students were excited about the new materials coming into their classes. Many teachers were quite concerned that the new books would be checked out by the students and never returned. We assured the teachers that books had to go home if reading was to take place. We would not encourage losses, but this was an expected outcome of our program. Books were taken home and read and many losses were incurred. But reading was taking place!

Through the in-service courses, we helped the teachers to develop certain skill-building activities. Very little could be accomplished in this area during the spring semester of 1969, because we wanted to know more about the specific reading needs of teachers and students. We involved the services of eight undergraduate students, enrolled in a program of urban studies, to help gather diagnostic information on students. Informal reading inventories in content areas—reading of literature samples, social studies and science and mathematics materials—were administered quickly and crudely. Interest inventories gave us some insight into types of materials which might be most useful. And the four professors tried to show teachers how to use this diagnostic information. Curriculum revision was an obvious outcome of our best efforts: new materials and new grouping procedures opened the doorway for more creative and relevant instruction. A few teachers subscribed to the ideas. They were encouraged, and during the summer, New Jersey Bell offered them a stipend to work on materials and curriculum guides for the new term. Materials would be ordered during the summer for the following fall term.

We are now beginning our second year. We have eight graduate assistants helping us in Central and we are running two in-service programs in reading instruction for thirty-five teachers. The teachers are being paid a stipend for their after-school participation. Assignments are completed, and discussions have been helpful and purposeful. New Jersey Bell will soon be moving into the responsible task of helping each of these new teachers to secure the wide range of materials for use in their classes in home economics, English, mathematics, business education, industrial arts, social studies, foreign languages, and the sciences. The school nurse, librarians, and guidance counsellors are working with us. Special scheduling patterns for groups of students are now being tried out, with some success. More and more teachers are finding out what reading is all about, and what is more important, some are willing to try more innovative ways of teaching within their content areas, utilizing a variety of materials to provide for the many interests and needs of the students involved. Much money, much time, and many moments of frustration and depression have been spent in trying to work out ways of reaching these young people who have tasted of failure once too often. As long as skills are taught right within the content areas, and as long as skills are re-inforced by specialists and teachers, students are beginning to realize that the skill-drill world of reading is related to some purposeful end. When students are given interesting books to read right in their English and social studies classes, not supplementary texts, and books with which they can identify and succeed, attendance problems have tended to decrease and class participation has increased. The television equipment is enabling us to record some of the more creative efforts of students and teachers as they respond to this program.

We have a long way to go to lick the problems in the school. But we have more teachers becoming actively involved, and we have a co-operative administration and the excellent resources of Mr. Landis in helping us analyze the problems and in acquiring the necessary resources for doing our job now. Our results will be measured by more than test scores. But we are now looking at things test scores can't measure. We are looking at changing instructional methods, the number of books being read, the ways reading is being used for educational and pleasureable purposes; and more of the faculty at Central are coming to accept us more and more.

By January of 1971, we shall know if the program will continue for an additional year, and then, too, plans will be made for soliciting additional graduate assistants and faculty involvement for doing a bigger and better job.

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Latency and Focus Methods of Cloze Quantification

Wilson L. Taylor and Ivan N. Waldman

PROGRAM FOR EXPERIMENTAL RESEARCH IN
COMMUNICATIONS BEHAVIORS**

LABORATORY OF HUMAN BEHAVIOR
DIVISION OF SPECIAL MENTAL HEALTH RESEARCH
NATIONAL INSTITUTE OF MENTAL HEALTH

INTRODUCTION

For those not already acquainted with the term, it is noted that "cloze"—spelled C, L, O, Z, E—was coined with reference to the concept of "closure" in gestalt psychology. Closure may be described as that sort of behavior which, when an unfinished or partly obscured pattern is perceived, attempts to make the pattern whole by "closing up the gaps" in it, that is, by projecting and inserting those parts which seem to fit the remaining context and so complete the pattern. Thus, in "It was totally ________ that night until, in ________ distance, I heard a ________ start barking furiously," one might guess, from the meaning and order of the words around and between the blanks, that the missing words are, respectively, "still," "the," and "dog." Such guesses, "cloze responses," would make the whole sentence read: "It was totally *still* that night until, in *the* distance, I heard a *dog* start barking furiously."

In 1953, the senior author here proposed "cloze procedure" as a way of measuring the relative "readability" of samples of prose.[1] Passages of equal length were equally "mutilated" by counting out, say, every fifth word in each. Each passage was then reproduced with a standard-length blank in place of every counted-out word. Then subjects were asked to guess the identities of the missing words and to write their guesses in the corresponding blanks.

Each of the cloze responses was scored by comparing it with the original word deleted, and relative readability was determined by counting up the total number of accurate guesses each passage received—the greater the number of accurate guesses, the greater the readability.

What has just been described is a form of the "right-wrong" approach to scoring cloze responses. This approach has been widely used by many investigators, including certain members of the National Reading Conference, for a variety of purposes of which readability is only one.

Meanwhile, two distinctly different approaches to scoring cloze responses have been developed. The purpose of this paper is to specify,

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** Address of this research program is 242 Behavioral Studies Building, Saint Elizabeths Hospital, Washington, D.C., 20032.

and to discriminate sharply among, all three approaches, and to show how and where the new ones—"time" or "latency" scoring and "subject-interagreement" or "focus" scoring—may be used.

RIGHT-WRONG SCORING

This approach includes all methods of defining criteria for "right" responses. For example, a response may be counted as correct when it is: (1) the same as the original word deleted; (2) the same as, or a semantically and grammatically acceptable alternative to, the original word, that is, any synonym judged to be "good enough" also counts; or (3) the same part of speech (noun, verb, adjective, etc.) as the deleted word regardless of vocabulary meaning.

Both the first and second methods are commonly employed to differentiate not only among the readability levels of prose texts (and their authors) but also among individual differences in performance (the number of words a subject guesses correctly) whether attributable to "intelligence," language facility, specific knowledge of the semantic content before or after study, or any combination of these.[2] The second method may yield more valid indices of both comprehension and comprehensibility (A good synonym *must* indicate that the reader *understood* the writer), but the first appears to give proportionately similar results, to be more sensitive to an author's style (with particular reference to his vocabulary), and easier to score because no subjective "good enough" judgment is required.

The third method appears applicable to testing the degree to which students of a foreign language are learning its sentence structure (as apart from specific vocabulary), that is, the order in which subjects, verbs, modifiers, etc. occur relative to each other.

Ordinarily, all these methods allow for group administration (many subjects can participate simultaneously), and they use sizable samples of prose, the systematic or random deletion of 25 or more words from each sample (the blanks being separated by at least four remaining words), plenty of time for subjects to make their guesses (to measure "rightness" rather than speed of response), and sums (or proportions) of the "rights" as data for analysis, usually by standard parametric statistics such as *t*-tests, analysis of variance, product-moment correlation, etc.

With some difficulty and certain modifications, these right-wrong scoring methods can also be applied to measuring the "listenability" of speech.[3] The stimulus materials are rehearsed and tape recorded by an announcer who tries to speak with good expression, yet pause about four seconds for each deleted word before he continues. In group administration, subjects write their responses on answer sheets while they listen to the tape.

TIME SCORING

Latency methods measure the elapsed time—to, say, the nearest second—between the exposure of a "cloze item" (a prose sentence with one word missing) and the subject's production of an acceptable response to it.

All such items are intended to be of "zero difficulty," that is, it is assumed that acceptable responses to them can be made by any subject who grew up speaking English, completed at least four grades in school, can see the stimulus items clearly, will pay attention to the task, is motivated to try, and has not suffered pertinent neurological damage. What is measured, then, is not the "rightness" of the response, but the length of time it takes for a subject to produce it.

Such items may fall into either of two extreme classes. One kind requires a unique response; for example, the only acceptable cloze response to "What is the matter ________ you?" is "with." The other kind, non-unique, allows for a number of alternative responses; "I saw a show about ________" can be acceptably completed by any of hundreds of nouns such as "golf," "science," "women," "dreams," "peanuts," etc. The response to a unique item is predetermined—it needs only to be recognized for what it is—but the non-unique item forces a subject to choose among several immediately obvious alternatives.

Every item is printed in bold 1-inch type on one side of its own white card about 18 inches wide and 7 inches high. The cards can be selected and shuffled to form different test assemblies of independent items.

Only one subject is tested at a time. The operator sits at a small table across from the subject, and there is a microphone between them. The operator turns up one card at a time and simultaneously speaks its number in the series being shown. The subject is directed to read the stimulus silently, but to voice his guess aloud as quickly as he can.

If the guess is acceptable, the operator says "Fine" and proceeds to the next card. If the guess is not acceptable, the operator says "No; try again." Further, as has happened with aphasic, geriatric, and emotionally disturbed subjects, if a subject is unable to produce an acceptable response to a particular item and quits trying, the associated latency score becomes an indeterminate X, a time interval assumed to be longer than any finite number of seconds taken to produce an acceptable response. In some actual data to be presented here will be seen one finite latency of 158 seconds, over 2½ minutes.

Everything said during a test session is recorded on magnetic tape. Later the tape is played back, and a stopwatch is used to measure each finite latency from the operator's announcement of an item's serial presentation number to the voicing of an acceptable response by the subject.[4]

One purpose of this latency research was to study how soon the order effects of repeated presentations of the same set of items (differently assembled each time) would bring subjects to an approximately stable level of "plateau" performance, i.e., to a baseline from which might be measured the differential effects of, say, different drugs or environmental situations on performance. To keep X responses from impeding progress toward a plateau, no given-up-on item was left behind until after the operator told the subject either the specific response if a Unique item or a few examples of acceptable response words if a Non-Unique one.

The statistical treatment of such latencies seems to require nonparametric approaches, e.g., the use of medians rather than means, frequency counts of the number of latencies which fall above or below some cutting point, the conversion of the raw latency scores to their ranks, and, instead of the usual *t*-tests for assessing significance, the Mann-Whitney U Test (for contrasting independent groups) and Wilcoxon's Matched-Pairs Signed-Ranks Test (for correlated measures).

For example, if a subject's latencies over eight items are, when ordered by size, 3,3,4,5,7,8,14,X, his central tendency can best be expressed as the median, "middle score," in this case 6. First, it is impossible to find the arithmetical average of a set of scores which includes even one indeterminate value, X, but a median can be computed as long as *less than half* of the latencies are indeterminate extreme values; the median of nine latencies like 3,6,6,8,11,X,X,X,X is 11.[5] Second, even if all the latencies are finite, there is no ground for assuming that they are additive and averageable; although one second is obviously less than 10 seconds, there is no way of knowing that the former latency indicates 10 times as good performance as the latter. In the latter, the total interval (between exposure of the stimulus and final elicitation of an acceptable response) may include other time-consuming factors such as the operator's "No; try again," the distraction caused by each such rejection and by other environmental stimuli, lapses in attention attributable to fatigue, etc.

A set of latency medians possesses, although probably to a lesser extent, the same quality—lack of equal-interval additiveness and averageability—as the sets of raw latencies from which each median is drawn. It follows that the central tendency of a set of median latencies also should be expressed as a median—as a higher-order median of medians (MdMd)—rather than as a mean. In some of the actual data to be presented in this section, there occurs the following set of Unique medians (each derived from 8 latencies) for nine Aphasics: 2.5, 2.5, 3.2, 3.2, 3.2, 3.8, 9.5, 17.5, 20.0. Mostly because of the few extremely long latencies, the mean of this set is 7.3 seconds, but the median of these medians is only 3.2. Nonparametric methods for assessing the significance of the difference between two sets of median latencies will be specified.

The exploration of time scoring began with an attempt to develop a set of Unique items which would measure even slight changes in the "rational verbal facility" of mental patients either so "withdrawn" as to be virtually mute or with speech so irrational or bizarre that it was socially uncommunicative. This was the reason for seeking Unique items of "zero difficulty"—and it now occurs that such test items might be useful with quite young school children.

A good Unique item is hard to find. In two stages, a total of about 75 items was "dreamed up," then tested empirically. They were mimeographed and administered to about 60 "normal" (not mentally disturbed) subjects of average-to-high "intelligence" and above-average education. The subjects were asked to write the most obvious response in each blank, then to write *all* the other grammatically and semantically rational (but not humorous or fanciful) responses they could think of in the margin opposite each item. Approximately 30 items survived analysis, i.e., 95% or more of the subjects agreed on the most obvious response to each and none proposed any very well fitting alternative response.

In the first several time-scoring studies, only Unique items were employed. Various sets of such items were administered to an aggregate of about 250 subjects: about 100 normal controls and 150 mental patients—groups of geriatrics, female chronic schizophrenics, male depressives, "litigious" (argumentative or contentious) and "non-litigious" male schizophrenics, and male chronics with various diagnoses including some organic ones. The research designs compared latency performance with a number of other variables, and, to explore order effects, each set of Unique items was administered 3 to 10 times (with the items in a different order each time) to the group concerned.

Among the main findings were: (1) in general, the performances of most kinds of subjects improved through three successive trials, by which time they approached plateau performance; (2) despite general improvement over the early trials, individuals tended to maintain their ranks within their own groups; (3) the contiguous presentation of two contextually paired items such as "The number of sides in a triangle is ________" and "The number of sides in a square is ________" did not seem to facilitate response to the one presented second; (4) male schizophrenics classified by their psychiatrist as non-litigious performed slightly but significantly better than the litigious ones;[8] (5) geriatric patients, as a group, exhibited significantly longer latencies than normal controls, but chronic female schizophrenics were distributed almost equally throughout the range of performance; (6) good-to-poor latencies were significantly correlated with good-to-poor performances on the usual tests, ratings, and rankings of "intelligence" (verbal and non-verbal), short- and long-term memory, reasoning, and environmental orientation, but, surprisingly, *not* with simple reaction time ("Press the key as soon as the light goes on").

More recently, 8 Non-Unique items were randomly sorted together with 8 Unique ones, and the resulting set was administered four times (the items differently ordered each time) to groups of Semantic Aphasics, Stutterers, and Normal Controls. In general, (1) Normals did better than Stutterers and the latter far better than Aphasics; (2) all groups did better on Unique items than on Non-Unique ones; (3) all groups improved with each trial, with Normals and Stutterers approaching plateau performance in Trial 3, but Aphasics still improving between Trials 3 and 4.[7] The changes in the Aphasic group appeared dramatic enough to suggest that the repeated administration of sets of cloze items might in itself be an effective form of therapy.

From the study just described were drawn the sample data needed to illustrate nonparametric methods of analyzing latencies. That study includes 9 Aphasics, 12 Normals, and 32 Stutterers. The sample presented here is restricted to data from the two smaller groups and to a single trial.

Table 1 exhibits the raw response latencies of every Aphasic and every Normal subject to 8 Unique and 8 Non-Unique items during the first trial. And, to emphasize visually the consistency of individual differences in both subjects and items, all original data have been reordered, the Unique and Non-Unique items by the performances of the Aphasics, and the individual subjects by their median performances within the Aphasic and Normal groups.

Also shown in Table 1 are sets of median (Mdn.) latencies and the higher-order median (MdMd) of each set. Those sets in vertical columns (subjects' medians over items) reappear in Table 2, and those in horizontal rows (items' medians over subjects) in Table 3.

Note in Table 1 that the agreement between column and row median-medians appears perfect for Normals and reasonably close for so few Aphasics despite the wide variability in their latencies, what is generally considered the lesser stability of medians as compared to means, and some rounding error. And here the median-medians shown in Table 1 are compared to what the corresponding means would be.

	Unique		Non-Unique	
Aphasics	Row	Col.	Row	Col.
MdMd:	3.9	3.2	7.1	6.5
Mean:	6.1	7.3	14.0	12.0
Normals				
MdMd:	2.0	2.0	2.2	2.2
Mean:	2.1	2.1	3.1	2.5

For Normal subjects, the median and mean values are very close, but for Aphasics all means are about twice as large as the medians.

TABLE 1

Raw and Median Latencies (In Seconds) of Nine Aphasic and Twelve Normal Subjects on Eight Unique and Eight Non-Unique Cloze Items in First of Four Trials

	8 Unique Items									8 Non-Unique Items								
Aph.	d	h	e	g	b	c	f	a	Mdn.	f	c	e	g	a	h	b	d	Mdn.
#10	2	2	2	2	4	3	3	13	2.5	3	5	3	3	8	9	6	59	5.5
#40	2	2	3	2	1	3	3	3	2.5	4	3	7	5	3	7	14	X	6.0
#79	2	3	3	4	5	3	3	X	3.2	3	3	7	2	7	3	4	X	3.5
#80	3	5	3	3	2	11	3	17	3.2	2	4	3	5	3	4	4	4	3.8
#15	5	2	3	3	3	3	5	34	3.2	3	4	5	11	6	37	13	46	8.5
#16	3	3	4	4	3	4	4	6	3.8	4	6	6	7	7	10	5	43	6.5
#41	7	7	12	9	9	10	42	16	9:5	13	5	15	X	13	50	23	X	19.0
#36	13	12	27	X	14	11	21	27	17.5	33	11	36	39	15	47	14	32	32.5
#3	9	11	16	X	56,	9	24	158	20.0	8	16	13	89	29	X	15	80	22.5
Mdn:	3.2	3.2	3.4	3.8	4.0	4.0	4.0	17.0	3.2 3.9 *	3.8	4.8	6.8	7.0	7.2	10.0	13.0	59.0	6.5 7.1 *
#57	1	1	1	1	2	1	2	3	1.3	2	2	3	3	2	2	2	1	2.1
#55	1	2	2	1	2	2	2	2	1.8	2	1	2	3	1	2	1	18	1.8
#53	1	2	1	2	1	2	2	3	1.8	2	2	3	4	2	2	2	24	2.3
#54	2	1	2	1	2	2	2	3	1.9	3	1	5	6	2	2	1	2	2.2
#72	2	2	2	1	1	2	2	4	1.9	2	2	4	10	2	2	2	6	2.3
#48	1	2	2	2	2	2	2	7	2.0	2	1	2	5	1	2	2	13	2.0
#45	2	2	2	1	3	2	2	3	2.1	2	2	2	9	1	2	2	4	2.1
#71	2	3	2	2	2	2	2	3	2.2	2	2	2	2	2	2	8	3	2.2
#66	2	2	2	1	2	3	4	3	2.2	3	2	3	3	2	4	2	21	2.8
#68	2	2	2	2	2	3	10	18	2.3	2	2	2	27	2	2	4	9	2.3
#69	3	2	3	2	3	2	2	5	2.5	2	3	4	6	4	4	8	7	4.2
#67	3	4	2	4	4	2	4	3	3.5	3	2	4	7	3	2	4	6	3.5
Mdn:	1.8	2.0	1.9	1.5	2.1	2.1	2.2	3.2	2.0 2.0 *	2.2	1.9	2.8	5.5	1.9	2.1	2.2	6.5	2.2 2.2 *

* Median of medians (MdMd); slight discrepancy between column and row values for Aphasics reflects small N, 9, and attendant median instability and rounding error.

Further inspection of Table 1 shows: (1) Within each group, the columns of Unique and Non-Unique medians appear to be correlated; (2) for every Aphasic individual, the median in the Non-Unique column is larger than the corresponding median in the Unique column; (3) the same is partly true for Normal individuals, half of the paired medians are exactly tied, but in each of the other six pairs, the Non-Unique median is larger than the Unique; (4) both columns of medians for Aphasics contain generally larger values than do the corresponding Normal columns below them. The significance levels of these observations are assessed in Table 2. All *p*'s shown are two-tailed.

In Table 2, all four columns reappear, and the medians are shown ranked within each subject group, w/G, and across (from top to bottom), both groups, a/G.

The rank correlation coefficients, ρ's, between the Unique and Non-Unique medians were found to be + .74, $p \leq .03$, for Aphasics and + .64, $p \leq .04$, for Normals, i.e., individuals who did well on Unique items also tended to do well on Non-Unique ones.

To test the intragroup difference between correlated Unique and Non-Unique medians, the former median was subtracted from the latter and the differences are shown in the first column under the "NU-U Diff." section of Table 2. Each difference was then ranked by its absolute size, w/G, within each group, and the sign, plus or minus, was attached to each rank. Then, following the Wilcoxon Matched-Pairs Signed-Ranks Test, the ranks with the least common sign were summed up to obtain T. Because no minus sign occurred in either group, $T = 0$ in both, and the probabilities were assessed by Wilcoxon's tables: for the 9 Aphasics, $p \leq .01$, and for the 6 Normals (the ties don't count), $p. \leq .05$.

The binomial Sign Test gives the same results. The ratios of 9:0 for Aphasics and 6:0 for Normals also have p's $\leq .01$ and .05, respectively. For less one-sided results than these, however, the Wilcoxon method, which takes account of the sizes as well as the signs of the ranks, is a far more powerful test of significance and should be preferred over the Sign Test, which considers only the ratio of frequencies assigned to a dichotomy of plus and minus.

The Mann-Whitney U Test was applied to the distribution of a/G ranks across independent groups, 9 Aphasics and 12 Normals, and the values of U were found to be significant, $p \leq .01$, in all comparisons. As shown in Table 2, the Aphasic group had reliably larger median latencies than Normals for Unique items, for Non-Unique items, and for NU-U differences.

Not shown in Table 2 because of lack of space is the possibility of using Fisher's Exact Probability Test for assessing the significance of group differences. Like the Sign Test, the Fisher method also has the disadvantage of reducing all data to frequencies and dichotomies,

TABLE 2: ANALYSES OF MEDIAN LATENCIES PER SUBJECT
(Starting medians from vertical columns in Table 1)

	Unique (U)			Non-Unique (NU)			NU-U Diff.		
	Medi-ans	Ranks (R) w/G	Ranks (R) a/G	Medi-ans	Ranks (R) w/G	Ranks (R) a/G	Medi-ans	Ranks (R) w/G	Ranks (R) a/G
9 Semantic Aphasics									
#10	2.5	1½	12	5.5	3	15	+3.0	+5	17
#40	2.5	1½	12	6.0	4	16	+3.5	+6	18
#79	3.2	4	15	3.5	1	11½	+ .3	+1	7½
#80	3.2	4	15	3.8	2	13	+ .6	+2	11½
#15	3.2	4	15	8.5	6	18	+5.3	+7	19
#16	3.8	6	18	6.5	5	17	+2.7	+4	16
#41	9.5	7	19	19.0	7	19	+9.5	+8	20
#36	17.1	8	20	32.5	9	21	+15.0	+9	21
# 3	20.0	9	21	22.5	8	20	+2.5	+3	15
MdMd:	3.2			6.0			(With N = 9)		. . .
Σ R:		(45)	147		(45)	150½	W : T = 0, p ≤ .01		145
(Corr):		(ρ = + .74, p ≤ .03)					S : x = 0, p ≤ .01		. . .
12 Normal Subjects									
#57	1.3	1	1	2.1	3½	3½	+ .8	+5	13
#55	1.8	2½	2½	1.8	1	1	.0		3½
#53	1.8	2½	2½	2.3	8	8	+ .5	+3	10
#54	1.9	4½	4½	2.2	5½	5½	+ .3	+1	7½
#72	1.9	4½	4½	2.3	8	8	+ .4	+2	9
#48	2.0	6	6	2.0	2	2	.0		3½
#45	2.1	7	7	2.1	3½	3½	.0		3½
#71	2.2	8½	8½	2.2	5½	5½	+ .0		3½
#66	2.2	8½	8½	2.8	10	10	+ .6	+4	11½
#68	2.3	10	10	2.3	8	8	.0		3½
#69	2.5	11	12	4.2	12	14	+1.7	+6	14
#67	3.5	12	17	3.5	11	11½	.0		3½
MdMd:	2.0			2.2			(With N = 6)		. . .
Σ R:		(78)	84		(78)	80½	W : T = 0, p ≤ .05		86
(Corr):		(ρ = + .61, p ≤ .01)					S : x = 0, p ≤ .05		. . .
Aphasic—Normal Differences							(3.0- .2)		
MdMd:	+1.2			+4.3			+2.8	. . .	. . .
MW:	U = 6, p ≤ .01			U = 2.5, p ≤ .01			U = 8, p ≤ .01		

In rankings, "w/G" are *within group* (Aphasic or Normal) and "a/G" *across groups*. "MdMd" is the median of a set of median latencies. "Corr" refers to the rank correlation coefficient, ρ. Significance or difference between sets of correlated data assessed by Wilcoxon Matched-Pairs Signed-Ranks Test, W, and the Sign Test, S, and between independent sets, by Mann-Whitney U Test, MW; p's 2-tailed.

and its use here requires the arbitrary selection of cutting points. If each cutting point is taken to be the middle of the gap between each group's MdMd values, the cutting point for Unique items becomes (3.2 + 2.0) / 2 = 2.6; for Non-Unique items, (6.5 + 2.2) / 2 = 4.35; and for NU-U differences, (3.0 + .2) / 2 = 1.6. The next step is to count and record the number of medians within each group which are less and more than the computed point value and enter the frequencies in 2 x 2 matrices, as shown here.

Cut Pt.:	2.6			4.35			1.6		
	Less	More	Sum	Less	More	Sum	Less	More	Sum
Aphasics:	2	7	9	2	7	9	2	7	9
Normals:	11	1	12	12	0	12	11	1	12
Sum:	13	8	21	14	7	21	13	8	21
$p \leq$	.01			.01			.01		

When the frequencies for the cells and marginal sums are designated as shown at right, the one-tailed probability, p (lt), of the difference between two groups may be computed by enough (one or more) applications of this tedious formula:

A	B	A + B
C	D	C + D
A + C	B + D	A + B + C + D = N

$$p\ (\mathrm{lt}) = \frac{(A+B)!\ (C+D)!\ (A+C)!\ (B+D)!}{N!\,A!\,B!\,C!\,D!}.$$

Fortunately, where neither A + B or C + D exceeds 15, the probability may be estimated by reference to tables of critical-value combinations of marginal and internal frequency values. Also, this 2 x 2 arrangement of frequencies can be assessed by the familiar chi-square method, with four observed frequencies and one degree of freedom, when no "expected" frequency is less than five.

Note that the nonparametric methods used here (1) make no assumption about how "normally" latency data are distributed and (2) are well suited to the analysis of small samples.[8]

Another look at some of Table 1's entries should precede inspection of Table 3. Note that Table 1's horizontal rows of median item latencies—each the median of the raw latencies of 9 Aphasics or 12 Normals—show that every item, Unique and Non-Unique, did better (had a shorter median latency) with Normals than with Aphasics. These rows of item medians reappear in Table 3, but they are rearranged vertically to accommodate the presentation of the items themselves.

All the nonparametric methods applied to the measures in Table 2 also are applicable to Table 3's sets of item medians, but it seems that the ways of utilizing those methods have already been sufficiently specified. Briefly, then, the results were: (1) sets of Aphasic and Normal medians for Unique items are significantly correlated, $\rho = +.76$, $p \leq .04$, but those for Non-Unique items are not, $\rho = +.27$, $p > .10$; (2) Aphasic median latencies are all larger than Normal ones, Unique and Non-Unique, and the Wilcoxon and Sign tests both yield $p \leq .01$; (3) the Mann-Whitney U Test shows Aphasics did significantly better on Unique than Non-Unique items, $p \leq .05$, but, no such significant difference was found for Normals, $p > .10$, and, when the median of the 16 item medians is taken as a cutting point, the Fisher Exact Test yields similar results.

Unique items were pitted against Non-Unique ones partly to test

TABLE 3: ANALYSES OF MEDIAN LATENCIES PER ITEM
(Table 1's horizontal rows of medians shown vertically here)

Items As Rank Ordered by Aphasics	Item Medians in Seconds	
	Aph.	Nor.
8 *Unique* Items:		
d. She was writing with a fountain ________. (PEN)	3.2	1.8
h. There are seven days in one ________. (WEEK)	3.2	2.0
e. Try this glove on your right ________. (HAND)	3.4	1.9
g. What is the matter ________ you? (WITH)	3.8	1.5
b. He was born in ________ Francisco, Calif. (SAN)	4.0	2.1
c. For breakfast he ate two soft-boiled ________. (EGGS)	4.0	2.1
f. The number of sides in a square is ________. (FOUR)	4.0	2.2
a. She listened to each of them, one at ________ time. (A)	17.0	3.2
MdMd:	3.9	2.0
8 *Non-Unique* Items:		
f. She went away for a ________. (MONTH, REST, VISIT, etc.)	3.8	2.2
c. She told ________ to come along. (IT, HIM, THEM, US, etc.)	4.8	1.9
e. They had ________ for supper. (BEEF, NOTHING, HER, etc.)	6.8	2.8
g. It was ________ their car. (IN, BY, ONLY, NOT, etc.)	7.0	5.5
a. Put this on your ________. (HEAD, LIST, BABY, HOUSE, etc.)	7.2	1.9
h. We drove downtown ________ times last week. (TWO, FIVE, AT, etc.)	10.0	2.1
b. He came from ________. (HOME, SHOPPING, WORK, BOSTON, etc.)	13.0	2.2
d. We saw a show about ________. (GIRLS, WAR, GOLF, NATURE, etc.)	59.0	6.5
MdMd:	7.1	2.2

Shown for each item is one Aphasic and one Normal value, medians of 9 and 12 subjects, respectively . . . For every item, Unique or Non-Unique, the Aphasic value is larger than the corresponding Normal one; these 8:0 ratios are significant, $p < .01$, by both the Wilcoxon and Sign tests. The Mann-Whitney method shows Non-Unique medians significantly larger than Unique ones in Aphasics ($U = 10.5$, $p < .03$), but not in Normals ($U = 18$, $p > .10$) . . . Note that Aphasics and Normals agreed in giving the longest median latency to Item *a* among Unique items and to Item *d* in Non-Unique ones. Also note that Normals gave the second-longest Non-Unique median to Item *g*.

the notion, from Information Theory, that the former represented highly "redundant" situations, in which every outcome (response) was almost completely predetermined, while the latter were characterized by much "entropy" or uncertainty because of the multiplicity of acceptable responses. It seemed that the Non-Unique situation would require a choice among competing responses, and that the time needed to select one and reject the others would be reflected in longer latencies.

Table 2's results showed some support for this hypothesis, particularly among Aphasics, where, for every one of nine subjects, the median latency over Non-Unique items was larger than the median over Unique ones. And Table 3 shows that both groups of subjects agreed in giving the longest item median to the same Non-Unique item, d, which reads: "We saw a show about ———." And the authors here believe that there actually are more acceptable responses to this item than any of the others.

It is obvious, however, that not all differences in response latencies can be attributed to sheer entropy. Table 3 also shows that both Aphasics and Normals agreed on giving one particular item the longest median among Unique Items. That item, a, is "She listened to each of them, one at ——— time." Perhaps the relative complexity of the sentence structure was the dominating factor. And, to return to the Non-Unique set, note that Normals gave their second-longest of all median latencies to "It was ——— their car." Some subjects volunteered that the fact that the remaining words form a complete sentence by themselves, without the insertion of another word, was confusing; as if the blank asked to be jumped rather than filled.

Up to this point, only latency data from the first of four consecutive trials have been presented for analysis. All of a subject's trials through the same 16 items (differently ordered) were conducted during a single session with short rest periods between. When the first-trial data in Table 1 are compared with similarly arranged data from the fourth trial, these are some of the similarities and differences observed.

1. For Aphasics—In the first trial there occurred eight indeterminate X's, one or two each for 5 of the 9 subjects in that group, and one finite latency lasted 158 seconds; in the fourth trial no X occurred and the longest latency was 30. Also, the higher-order medians (MdMd) of the individual subject medians over each set of items, which were 3.2 (Unique) and 6.5 (Non-Unique) in the first trial, dropped to 2.1 and 2.9, respectively, in the fourth.

2. For Aphasics and Normals—Every subject in both groups improved in that his fourth-trial median latency over each set of items (Unique and non-Unique) was smaller than his corresponding first-trial median. However, one overall difference between the two sub-

ject groups persisted; in the first trial every one of the 16 items did better (had a smaller median latency over subjects) with Normals than with Aphasics, and this was still true for the fourth trial. And in that fourth trial, Aphasics still showed significantly larger latencies for Non-Unique items than for Unique ones, but Normals did not.

3. For Unique and Non-Unique Items—With one exception, the fourth-trial median latency over each group of subjects was smaller for every item than was the first-trial median. The exception was "What is the matter ——— you?" a Unique item, the median of which over Normals remained exactly the same, 1.5 seconds.

4. "Outstanding" Items—The three individual items most outstanding in the first trial had ceased to be so in the fourth. "We saw a show about ———"was no longer associated with a relatively long latency in either subject group and "It was ——— their car" had come to elicit a prompt response from Normals. Perhaps, with repetition, each subject tended to adopt one particular Non-Unique response for constant use, i.e., made it "unique" for himself. Also, "She listened to each of them, one at ——— time," the Unique item with the longest median latency for both groups in the first trial, had become one of the items most promptly responded to. However, in the fourth trial, "What is the matter ——— you?" stood out; it had become, for both subject groups, associated with the longest response latency of any Unique item. Was the fact that this item was the only one in the form of a question somehow involved?

RESPONSE-INTERAGREEMENT SCORING

These methods take account neither of the promptness of a cloze response nor of any criterion of "correctness." Rather, they quantify—one blank at a time—the relative degree to which independent cloze responses are alike, i.e., to which all of them tend to fall into one, or a few, or a few closely related categories, instead of being distributed equally among all, or among diametrically conflicting, categories which form any of three kinds of "scales," nominal (no scale at all), ordinal (linearly ranked like an intensity rating scale), or circular (like hues around a color wheel). Synonymous with response-interagreement are "commonality," "relative redundancy," and (proposed here) "focus." These different terms involve different approaches to quantifying the same quality.

NOMINAL CATEGORIES

When each subject (at least in groups up to 50) is given a single guess, unrestricted except by remaining context, about the identity of a missing word, the number of theoretically possible categories (different kinds of responses) is assumed to be equal to the number of subjects, e.g., each subject could make a different kind of response to "I saw a show about ———" inasmuch as the remaining context exerts insufficient constraint on the nature of the response. With six subjects and the corresponding possible alternatives, a,b,c,d,e,f, zero agreement can be expressed schematically by

Alternatives:	*a*	*b*	*c*	*d*	*e*	*f*
Frequencies:	1	1	1	1	1	1

where each of six different possible kinds of response gets one "vote" (is given a frequency of one).

By contrast, with sufficient contextual influence a single kind of response may get all the votes, hence the five other hypothetical kinds receive none. "I heard a ——— bark" might well elicit (a) "dog" all six times and yield a scheme like 6, 0, 0, 0, 0, 0. This would be perfect interagreement. Note, however, that the degree of interagreement takes no account of the identity of the original word deleted. It would still be perfect if all six agreed on (b) "collie," (c) "fox," (d) "seal," (e) "loud," or (f) even the same nonsense word to yield any such scheme as 0, 6, 0, 0, 0, 0; 0, 0, 6, 0, 0, 0; . . .; 0, 0, 0, 0, 0, 6.

Commonality, relative redundancy, and focus methods all give, quite properly, opposing extreme scores to the perfect and zero cases of response-interagreement, but the methods differ in their ability to discriminate among intermediate cases. For six subjects, each with one unrestricted guess, the various degrees of interagreement involve a total of 11 possible schemes, as shown in Table 4.

The two commonality methods appear the least precise. One of them considers only the largest frequency given any alternative, which means that 3, 3, 0, 0, 0, 0 and 3, 1, 1, 1, 0, 0 each score 3 despite the greater interagreement (over fewer categories of the former. The other method counts the number of categories actually used (the fewer used, the greater the concentration on them), but that gives both 5, 1, 0, 0, 0, 0 (almost perfect interagreement) and 3, 3, 0, 0, 0, 0 the score of 2. It is probable, of course, that the average of either kind of commonality score will, over a large enough sample (many blanks), approach stability, but such crude measures have little but their simplicity to recommend them.

Relative redundancy ("relative negative entropy") is a more sophisticated measure of interagreement because it takes into account the relative proportion of frequencies within each category, but it has shortcomings too.[9] It fails, for example, to yield a monotonic scale of values from perfect to zero redundancy, e.g., there are two instances of reversals in trend in Table 4; what should be scores equal to their preceding ones are actually larger. This appears to be an artifact of the method of computing relative entropy. It sums the negative logarithms of the proportions of the total frequency allocated to each category and this operation exaggerates the weights of small frequencies.

In 1956 at a graduate colloquium of the Institute of Communications Research of the University of Illinois, Urbana, the senior author

TABLE 4

Comparison of Different Ways of Quantifying Response-Interagreement Among N Independent Events Allocated to K Nominal Categories

Commonality Indices Largest f	Commonality Indices No. K's Used	% Rel. Redund. (Negat. Entropy)	Array of All Schemes (Perfect to Zero Focus) K = 6 & N = 6	Chi—* Squ.	DVG Nom (Σff)	Exact Probability Computation Permutations F_1	F_2	F $(F_1 \times F_2)$	Cumul. F	p(It)
6	1	100	6,0,0,0,0,0	30	0	6	1	6	6	.000 + **
5	2	75	5,1,0,0,0,0	20	5	30	6	180	186	.004
4	2	64	4,2,0,0,0,0	14	8	30	15	450	636	.014
4	3	52	⌈4,1,1,0,0,0	12	9	60	30	1800⌉		
3	2	61	⌊3,3,0,0,0,0	12	9	15	20	300⌋	2736	.059
3	3	44	3,2,1,0,0,0	8	11	120	60	7200	9936	.213
3	4	31	⌈3,1,1,1,0,0	6	12	60	120	7200⌉		
2	3	39	⌊2,2,2,0,0,0	6	12	20	90	1800⌋	18936	.406
2	4	26	2,2,1,1,0,0	4	13	90	180	16200	35136	.753
2	5	13	2,1,1,1,1,0	2	14	30	360	10800	45936	.985
1	6	0	1,1,1,1,1,1	0	15	1	720	720	46656	1.000

$\Sigma F = K^N = 46656$

* With K-1 degrees of freedom, but significance not assessable by use of familiar chi-square distribution because $N < 5K$.

** Conservatively rounded to three decimal places; exact probability is 6/46656 or approximately .00013.

Each bracket set encloses schemes which are tied in their chi-square and DVG (divergence from focus) values . . . F_1 shows the number of ways each set of frequencies can be assigned to different nominal categories, a,b,c,d,e,f, and F_2 shows the number of ways N independent events can be assigned to any particular set of frequencies. Their product, F, is the total number of ways each scheme can occur by chance.

here introduced his first version of a "focus" method for monotonically quantifying response-interagreement. The method later went through several revisions, but in every application to nominal categories, it was a derivation of that chi-square test which contrasts an "observed" distribution of N frequencies to K categories with an "expected" equal distribution to all of them.

This was, however, an unconventional use of chi-square inasmuch as it wholly ignored the chi-square "rule" which requires that every expected frequency be at least five. This means that with $K=6$, as in Table 4, the minimum value of N must be $5K=5x6=30$ instead of only six. The penalty for violating that rule is the loss of the use of the familiar "chi-square distribution" for conveniently evaluating the significance of a computed value of response-interagreement. The only recourse was the construction of complete probability distributions, i.e., the tedious exact computation, for each combination of given sizes of N and K, of the permutations of the total number of ways in which each possible response-interagreement value can occur by chance.

Table 4 also illustrates the construction of one such exact probability distribution, for $N = 6$ and $K = 6$, of all possible values of two indices of focus—chi-square (unconventional) and its related nominal-case index of divergence from focus, DVG_{nom}—and the 1-tailed probabilities, p(lt), of their change occurrence. Note that the perfect-focus case, 6, 0, 0, 0, 0, 0, with a chi-square of 30 and a DVG_{nom} of zero, would occur by chance only 6 times in 46,656, $p=.00013$. Further, in the next-to-perfect case, 5, 1, 0, 0, 0, 0, the probability of the associated chi-square of 20 *or more*, or of a DVG_{nom} of 5 *or less*, is .004. Reference tables of "critical" values at conventional levels of significance are compiled from complete frequency distributions like this one. For this combination of N and K values, DVG_{nom} at the $p < .05$ level would be entered as 8 or less.

After much exploratory work, it was concluded that one of the most convenient ways to assess the focus of independent events within nominal categories was to compute its opposite, the index of divergence. This also avoided the confusion of using the term "chi-square" in an unconventional way. When is focus perfect, $DVG_{nom} = 0$. As focus decreases, DVG_{nom} increases. And the formula is

$$DVG_{nom} = \Sigma ff \quad \text{. . . . .} \quad (1)$$

where ff is the product of the frequencies distributed to any pair of categories and where Σff is the sum of the products of all possible, $K (K-1)/2$, pairs: ab, ac, ad, ae, af, bc, bd, . . ., ef. In 6, 0,0,0,0,0,0, at least one factor in each pair is zero, hence every product is zero, and the sum is zero. The DVG_{nom} of 3, 2, 1, 0, 0, 0 may be computed, while excluding those pairs which include zeroes, as $(3x2) + (3x1) + (2x1) = 6 + 3 + 2 = 11$. Note that the values of DVG_{nom} in Table 4 bear a precisely proportional, but inverse, relationship to their corresponding chi-square values.[10]

If the foregoing discussion has left the impression that the ordinal-case focus method applies only to situations in which $N = K$, a correction is in order. The number of categories can be either more or less than the number of independent events. The method applies where, say, the responses of 17 subjects, $N = 17$, are restricted to the selection of one out of four word choices, $K = 4$. It also applies to four subjects, $N = 4$, each choosing one word out of a list of 17, $K = 17$. In each instance, however, the assessment of the significance of a result depends on the computation of the exact probability distribution for the relevant combination of N and K values. Over several years, mostly through the efforts of mathematically talented mental patients in occupational therapy, nominal-category distributions for 295 different combinations of N and K have been constructed, and "critical" DVG_{nom} values at two conventional levels of significance, $p \leq .05$ and $.01$, appear in Tables 5 and 6.[11]

The response-interagreement approach to quantifying cloze responses seems to offer reading research more than just a way of assessing the focus of one blank at a time. Counts of the number of blanks on which subjects interagree at, say, $p \leq .01$ might discriminate between the comprehensibility levels of different samples of prose just as well, or better than, the counts of right-wrong scoring. Also, the number of blanks in which an individual's response agrees (or disagrees with the majority's responses (whether they are "right" or not) might index something about that individual's ability, personality, or social or educational background.

Further, the response-interagreement concept might be applied to the construction of prose passages which would closely reflect the average vocabulary habits of a particular population. If a population sample were administered a passage in such a way that the subjects independently guessed every word from the context of the remaining words, and if the majority guess for each blank were substituted for each original word that differed from it, the subjects would, in a sense, have rewritten the entire passage in their own words.

In 1953 the senior author here prepared five cloze versions of the same passage.[12] The first 10 words were left untouched. Then began the process of counting out every fifth word. In each version, however, the counting started with a different word so that, in aggregate, all versions together took out 175 consecutive words. Each version was administered to a different group of 50 randomly selected students in Freshman English, then the most frequent response for each blank was extracted and put in consecutive order. The introductory words which were not blanked out were: "It seems to me that I can hardly pick up . . ." The next five words were, according to the author,

"a magazine nowadays without encountering . . .".

TABLE 5

Maximal Values of DVG_{nom} With 1-Tailed Probabilities $\leq .05$

K No. of Categ.	N: Number of Independent Events 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	x	x	x	x	0	0	0	8	9	10	20	22	24	36	39	52	56	60	75	80	85
3	x	x	0	0	0	6	12	18	21	28	35	42	49	59	68	79	87	100	112	122	137
4	x	x	0	0	5	10	16	21	27	34	42	50	59	69	80	92	103	116	130	145	160
5	x	0	0	4	8	12	17	23	30	37	46	55	64	76	86	99	112	126	140	156	172
6	x	0	0	4	8	12	19	25	32	40	48	58	68	79	91	104	118	132	148	163	181
7	x	0	0	6	9	14	20	26	33	41	51	60	71	82	95	108	122	137	153	170	187
8	x	0	0	6	9	14	20	27	34	42	52	62	73	85	97	111	124	141	157	174	192
9	x	0	3	6	9	15	21	28	35	44	53	63	74	86	99	113	128	143	160	177	..
10	x	0	3	6	9	16	21	28	36	44	54	64	76	88	101	115	130	146	162	180	..
11	x	0	3	6	11	16	21	28	37	..	..	..	..	..	..	..	..	..	..	..	..
12	x	0	4	6	11	16	22	29	37	..	..	..	..	..	..	..	..	..	..	..	..
13	x	0	4	6	11	16	23	29	37	..	..	..	..	..	..	..	..	..	..	..	..
14	x	0	4	7	11	16	23	30	37	..	..	..	..	..	..	..	..	..	..	..	..
15	x	0	4	7	11	16	23	30	38	..	..	..	..	..	..	..	..	..	..	..	..
16	x	0	4	7	11	17	23	30	38	..	..	..	..	..	..	..	..	..	..	..	..
17	x	0	4	7	11	17	23	30	38	..	..	..	..	..	..	..	..	..	..	..	..
18	x	0	4	7	11	17	23	31	39	..	..	..	..	..	..	..	..	..	..	..	..
19	x	0	4	7	11	17	23	31	39	..	..	..	..	..	..	..	..	..	..	..	..
20	0	0	4	7	12	17	23	31	39	..	..	..	..	..	..	..	..	..	..	..	..
21	0	0	4	8	12	17	24	31	39	..	..	..	..	..	..	..	..	..	..	..	..
22	0	0	4	8	12	17	24	31	40	..	..	..	..	..	..	..	..	..	..	..	..

An observed DVG_{nom} no larger than the relevant tabled value indicates the null-case probability of the associated focus is $\leq .05$. The "x" entries at left and top indicate combinations of N and K too small to allow even perfect focus, $DVG_{nom} = 0$, to be significant. The " " entries at right and bottom indicate combinations of N and K for which exact distributions have not been constructed.

TABLE 6

Maximal Values of DVG_{nom} With 1-Tailed Probabilities $\leq .01$

K No. of Categ.	N: Number of Independent Events																				
	2	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
2	x	x	x	x	x	x	0	0	0	0	11	12	13	26	28	30	45	48	51	68	72
3	x	x	x	x	0	0	7	8	17	24	27	36	43	50	60	70	80	90	101	111	127
4	x	x	x	0	0	6	12	18	21	30	36	44	53	63	74	84	96	108	123	136	149
5	x	x	0	0	5	10	15	18	27	33	41	50	59	70	80	93	106	118	133	148	164
6	x	x	0	0	5	10	16	21	28	36	44	54	64	74	86	99	112	126	141	157	174
7	x	x	0	0	8	12	17	24	31	38	47	56	66	78	90	103	117	132	147	163	181
8	x	x	0	4	8	12	18	24	32	40	48	58	69	80	93	106	120	135	151	168	186
9	x	x	0	4	8	12	19	25	33	41	49	60	71	82	95	109	123	138	155	172	. .
10	x	0	0	4	8	14	20	26	33	42	51	61	72	84	97	111	125	141	157	175	. .
11	x	0	0	6	9	14	20	26	34	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
12	x	0	0	6	9	14	20	27	34	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
13	x	0	0	6	9	14	20	28	35	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
14	x	0	0	6	9	14	21	28	36	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
15	x	0	0	6	9	15	21	28	36	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
16	x	0	0	6	9	16	21	28	37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
17	x	0	0	6	9	16	21	28	37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
18	x	0	0	6	9	16	21	29	37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
19	x	0	0	6	11	16	22	29	37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
20	x	0	3	6	11	16	22	29	37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
21	x	0	3	6	11	16	22	29	37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
22	x	0	3	6	11	16	23	29	38	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .

An observed DVG_{nom} no larger than the relevant tabled value indicates the null-case probability of the associated focus is $\leq .01$. The "x" entries at left and top indicate combinations of N and K too small to allow even perfect focus, $DVG_{nom} = 0$, to be significant. The ". ." entries at right and bottom indicate combinations of N and K for which exact distributions have not been constructed.

but the record of most frequent responses said the words should have been these:

"a paper today without reading . . ."

The author's version better fits his own meaning (a "paper" is not a "magazine") and his other word choices may have better fitted his "style," but the cloze-derived version, which substitutes "today" for "nowadays" and "reading" for encountering," may be better "journalism," i.e., better for that sort of exposition intended to convey explicit information to the general reader as quickly and clearly as possible.

ORDINAL AND CICULAR CATEGORIES

Here are two other ways of quantifying response-interagreement. Neither may be very useful to reading research, but both are focus methods and both are relevant to the application of cloze procedure to pictorial materials.

Pictures were covered with transparent grids in which systematically chosen squares were blacked out. Each subject was asked to guess, from the context around each such square, the configuration under it. For black-and-white halftone pictures, the subject also was asked to convert each guessed configuration into a decision about which shade of gray occupied more of the obscured area than any other shade, to compare that shade with a five-step gray scale, and to record on an answer sheet the code identification of the standard shade of gray nearest the imagined one.[13] Obscured squares in color pictures were judged in the same way except that the imagined most prevalent color was recorded by reference to a standard in which hues around the "color wheel" were represented.

The nominal categories already discussed are considered "independent"—not ordered in any particular way—so the focus of a scheme like 0,5,5,0,0, is unaffected by rearranging the frequencies in a different order like 5,0,0,0,5. The DVG_{nom} of *any* set of two 5's and three 0's is 25, by Formula 1.

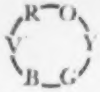
By contrast, the categories which made up the gray scale—white/light gray/medium gray/dark gray/black—are strictly ordered, and it is obvious that on this ordinal scale the focus of 0/5/5/0/0 (with all of $N = 10$ subjects choosing adjacent grays) is far greater than that of 5/0/0/0/5, where the 10 responses split between diametrically opposed extremes. The divergence index for the ordinal case, DVG_{ord}, takes account not only of the product of each possible ff pair, but of the square of the distance, d^2, between the members of that pair. The formula is

$$DVG_{ord} = \Sigma ffd^2. \qquad (2)$$

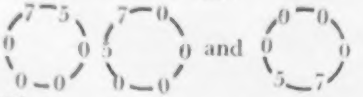
Applied to the schemes just used for illustration, and ignoring pairs with zero factors, the DVG_{ord} of 0/5/5/0/0 is $5 x 5 x 1^2 = 25$, but for 5/0/0/0/5 it is $5 x 5 x 4^2 = 400$. And the zero focus scheme of 2/2/2/2/2 yields an index of 200.

(Formula 2 bears a constant relationship to the familiar formula for variance, δ^2, but again K is so large relative to N that assessing the significance of an index value depends on the construction of exact probability distributions. About 80 such have been completed for various combinations of N and K values.)

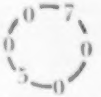
Successive hues like red, orange, yellow, green, blue, violet (then red again) for a set of circularly ordered categories as shown at right.

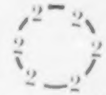


With K = 6 and N = 12, all these sets of responses (at right) show equal and considerable interagreement.



Much less interagreement is displayed in this, and the case with zero focus in this,





The divergence index for the circular case, DVG_{cir}, is computed by this formula:

$$DVG_{cir} = \Sigma ffdd, \qquad (3)$$

where ffdd is the product of any pair of frequencies and the two clockwise (or counterclockwise, but *not* both) distances between them. In each of the three illustrations where 7 and 5, in either order, are distributed to adjacent hues, the computation of the circular index is (ignoring pairs which contain zero factors) 7x5x1x5 = 175. Where 7 and 5 are allocated to opposing hues, orange and blue, DVG_{cir} = 7x5x3x3 = 315. And in the zero focus case, DVG_{cir} = 420. (Again, assessing the significance of a computed exact distribution, and about 80 such have been constructed for various combinations of N and K in the circular case.)

FOOTNOTES

[1] The senior author read a paper entitled Cloze Procedure at the annual convention of the Association for Education in Journalism in August, 1953, at Michigan State University, East Lansing. His first professional article on "cloze" appeared later that year. It was "Cloze Procedure"; a New Tool for Measuring Readability, *Journalism Quarterly*, 1953, *30*, 415-433.

[2] See: Taylor, Wilson L., "Cloze Readability Scores as Indices of Individual Differences in Comprehension and Aptitude, *Journal of Applied Psychology*, 1957, *41*, 19-26.

[3] From: Recent Developments in the Use of "Cloze Procedure," *Journalism Quarterly*, *33*, 1956, 42-46, 99, also by Taylor.

[4] Some subjects, most of them mental patients, have been found to speak in such faint tones that although the operator can understand them, the tape recorder fails to pick up a signal strong enough to be clearly audible on playback. However, acceptable responses can be identified by the fact that they are immediately followed by the operator's "Fine."

[5] In some sets of size-ordered measures, the median can be determined almost immediately by mere inspection, e.g., with an even number of measures like 2,2,3,5,6,9, the median is 4, i.e., the middle of the gap, 3 to 5, which separates the lower 50% of the measures from the upper 50%. Also, with an odd number of measures like 1,2,2,5,7,8,X, the middle measure, 5, is the median. But when

the median involves two or more measures of equal value at and near mid-scale, such as 2,2,2,5 or 1,2,3,3,3, the median must be computed by the standard formula,

$$\text{Median} = L + \left[\frac{\frac{N}{2} - \Sigma f_b}{f_w}\right] i\,.$$

where L = lower limit of the interval containing the median; N = total number of measures; Σf_b = frequency (number) of measures below (b) the interval containing the median; f_w = frequency (number) of measures of the same value within (w) the interval containing the median; and i = size (range) of the basic scale interval. In the examples already used, i = 1; but in a set like 1.0, 1.1, 1.3, 1.6, 1.7, 2.0, i = .1 . . . In 2,3,3,3,3,5,8,9, L = 2.5, N = 8, $\Sigma f_b = 1$, $f_w = 4$, i = 1, and the formula would yield 2.5 + .75 = 3.25 or rounded down because 2 is an even number, 3.2.

[6] These results were summarized in an unpublished paper, Application of Cloze Procedure to the Verbal Behavior of Mental Patients, given by the senior author here in 1963 in Washington, D.C., at an annual meeting of the American College of Neuropsychopharmacology.

[7] A preliminary account of these results constituted a technical report—Relative Latencies of Semantic Aphasics, Stutterers, and Normal Controls for "Cloze" Items Requiring "Unique" and "Non-Unique" Oral Responses, by Wilson L. Taylor, James L. Lore, and Ivan N. Waldman—presented by the second author in October, 1967, at Ann Arbor, Mich., at an annual meeting of the Academy of Aphasia. In that report, the means of medians were used descriptively for tables and graphs, but all "mean differences" were assessed by the nonparametric methods described here.

[8] Many nonparametric statistics, including all of those used here for analyzing latency data, are clearly described, exemplified, and accompanied by the necessary reference tables in Sidney Siegel's *Nonparametric Statistics for the Behavioral Sciences*, McGraw-Hill, New York, 1956.

[9] The senior author here made extensive use of entropy measures in his doctoral dissertation, Application of "Cloze" and Entropy Measures to the Study of Contextual Constraint in Samples of Continuous Prose, 1954, University of Illinois, Urbana . . . Abstract in *Dissertation Abstracts*, 1955, *15*, 464-465.

[10] The Value of DVG_{nom}, as given by Formula 1, also may be computed by an alternative formula,

$$DVG_{nom} = \frac{N^2 - \Sigma f^2}{2}\,. \qquad \text{(1a)}$$

where N is the total number of independent events and Σf^2 is the sum of the
squares of the K individual frequencies. Applying this alternative formula to
6,0,0,0,0,0, yields: $N^2 = 6^2 = 36$; $\Sigma f^2 = 6^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 = 36$;
$N^2 - \Sigma f^2 = 0$; and $0/2 = 0$. Starting with 3,2,1,0,0,0 yields: $N^2 = 36$; $\Sigma f^2 =$
$3^2 + 2^2 + 1^2 + 0^2 + 0^2 + 0^2 = 14$; $N^2 - \Sigma f^2 = 36 - 14 = 22$; and $22/2 = 11$.

[11] These reference tables of critical values were among those which first appeared
in a technical report, Assessing the "Focus" of M Independent Events Within
Nominal, Ordinal, and Circular Sets of N Alternatives, written by Wilson L.
Taylor and Ivan N. Waldman and presented by the senior author in September,
1967, in Washington, D.C., at an annual convention of the American Psycho-
logical Association . . . Abstract in *American Psychologist*, 1967, *22*, 544, entitled
Methods of Assessing the "Focus" of . . . etc. (Notice that the notation used in
the title of that technical report differs from the notation here. What were
referred to as M events and N categories are now denoted as N events and K
categories.)

[12] This is more fully described in the senior author's doctoral dissertation referred to in Footnote 9.

[13] In 1966 at the American Psychological Association's annual convention, held in
New York City, the senior author here gave a slide lecture on An Attempt to
Quantify and Contrast Pictorial Stimuli by an Adaptation of Cloze Procedure
Methods. This was limited to black-and-white pictures and to the ordinal case
of focus . . . Abstract in *American Psychologist*, *21*, 725, 1966.